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#42
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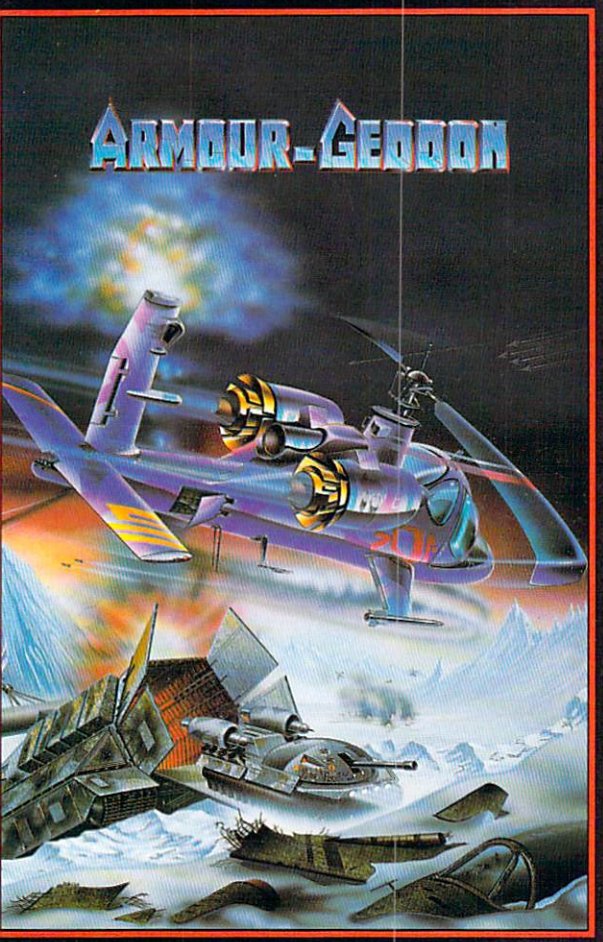

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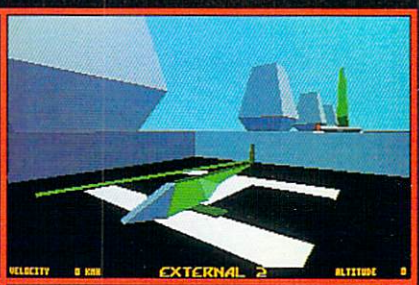

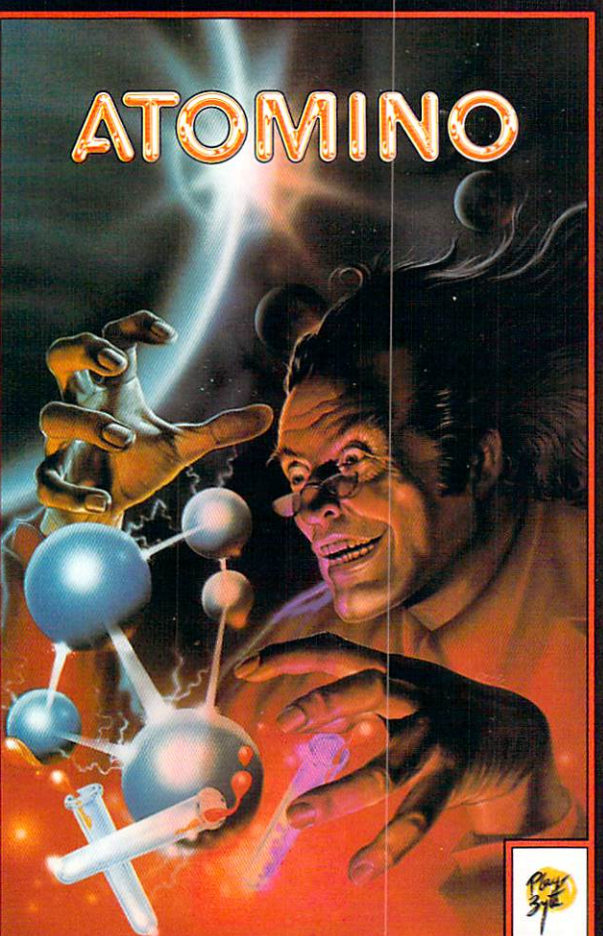

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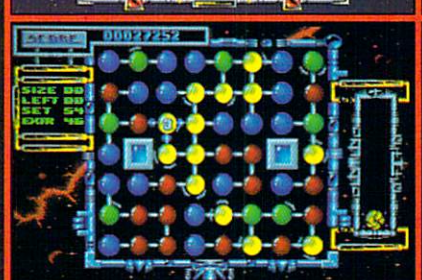

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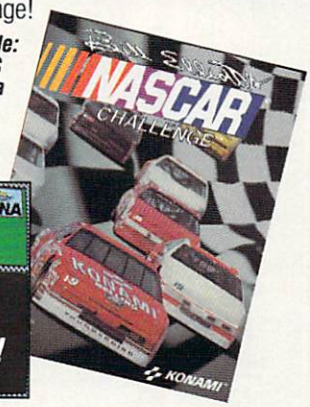

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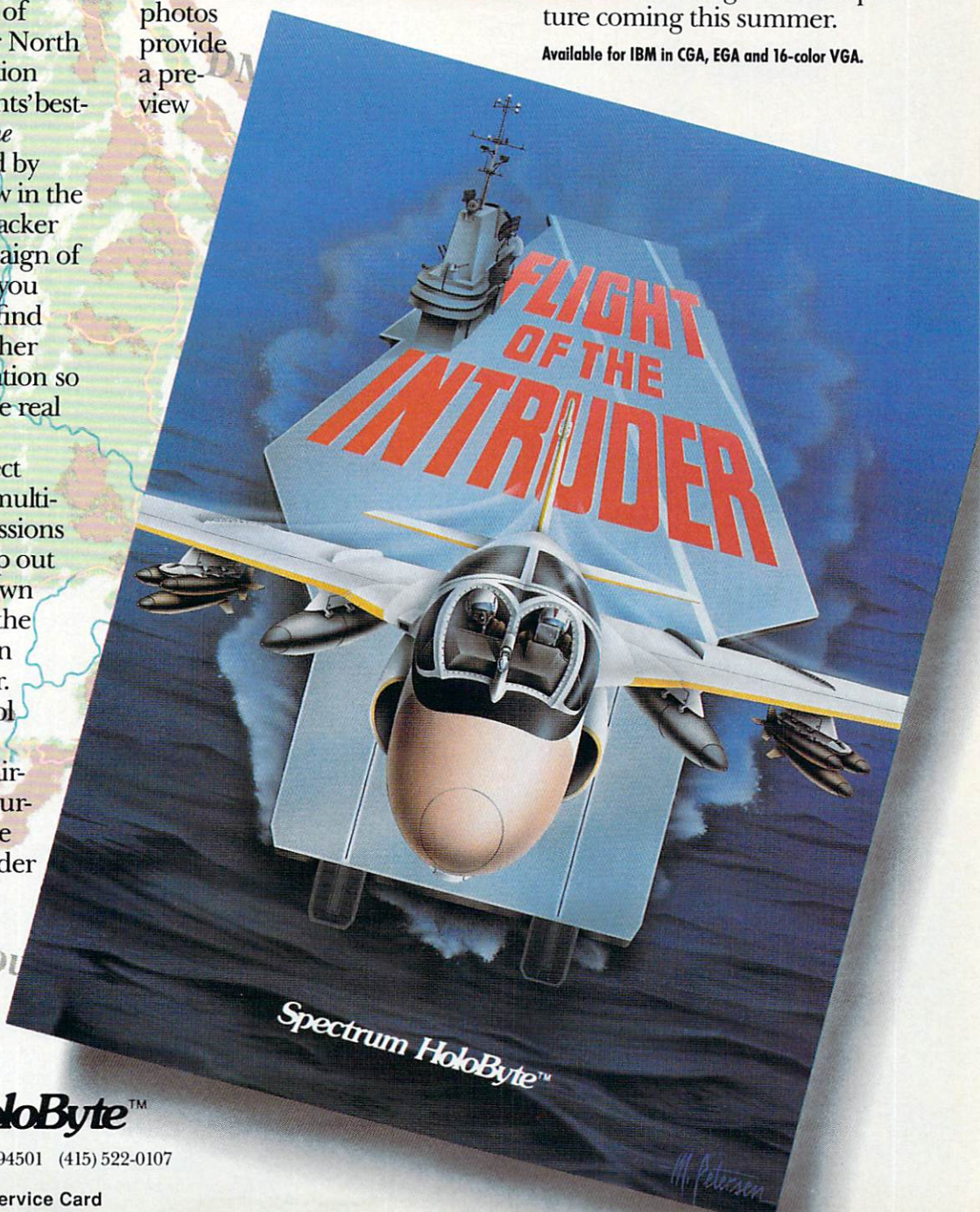

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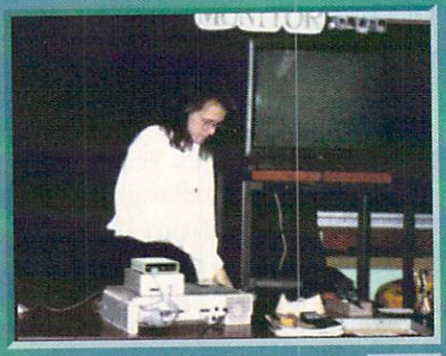

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ABOUT .info

This month's cover is a 24-bit super bitmap rendered with Newtek's *Lightwave 3D*. Objects were modeled with Byte-By-Byte's *Sculpt 4D*. Everything in this magazine (except for some of the ads) is digitally created, edited, and color separated as complete pages on Amigas running off-the-shelf software and peripherals, and output directly to film.

The 1st magazine produced entirely with personal computers.

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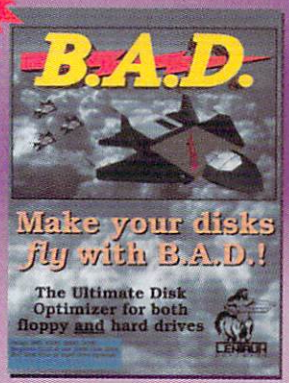

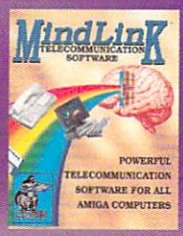

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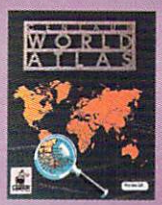

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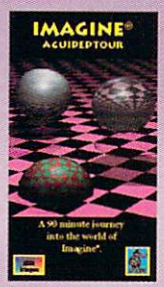

Professional Techniques for Deluxe Paint III

The best-selling Amiga video ever. Explore cel animation, 3D perspective, special effects, shortcuts and more. Learn how to get the most out of Deluxe Paint III from artist Jeff Bruette and DPaint's creator, Dan Silva.

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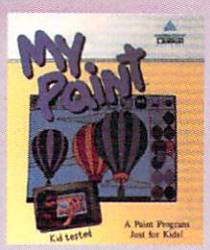

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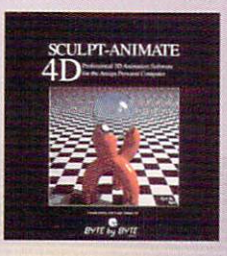

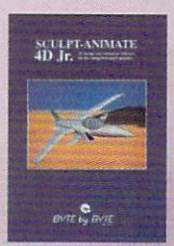

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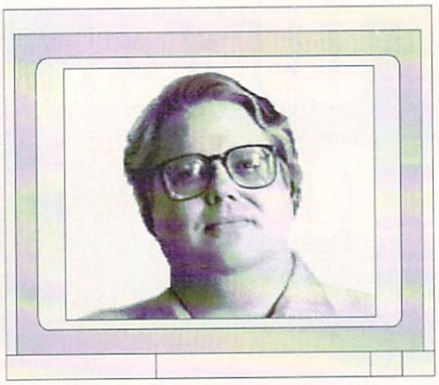

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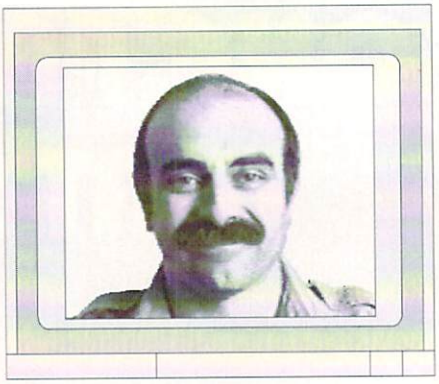

SEEDY TV?

CDTV is raising more dustclouds of controversy than any product Commodore has introduced since the Plus/4. People seem to either love it or hate it. By and large, those who love it are technophiles who see it in a vacuum as a nifty new technology. Those who hate it (or at least have reservations about it) see CDTV as having some notable shortcomings, both in its implementation and in the marketing philosophy behind it.

We've received a lot of feedback regarding our initial review of CDTV in the last issue of *.info*. Much of it was positive, but many people seemed to think we were 'attacking' CDTV. We'd like to address some of these comments:

"By being so negative about CDTV, you are biting the hand that feeds you."

This was from an Amiga developer whose product, ironically, doesn't work on CDTV. Anyway, this sort of comment has never bothered us. We have to call them like we see them. We don't print opinions that are not our own. And we don't feel that what we had to say was that negative. In fact, we said we basically *liked* CDTV, with some reservations. The folks at Commodore agreed, saying they felt we were 'objective.'

"Joe Consumer is scared by computers. CDTV is an audio/video appliance."

This is a simple parroting of Commodore's marketing plan for CDTV. We don't buy it. You can't just say "CDTV is not a computer" and have it be so; because in fact, it *is* a computer. Besides, the argument falls apart in the face of reality. In the first place, Commodore's own target audience for CDTV is families with incomes over $50,000. Most of these people use computers every day at work. They're not afraid of them. Secondly, if you mask the fact that there is a computer in CDTV - as Commodore is now doing - the consumer is *not* going to see enough value in it so that he will plunk down his money for it. Third, Joe Consumer's audio/video rack is getting pretty full already, what with CDs, DATs, LPs, MTS TV, Nintendos, laserdiscs, and whatnot plugged into each other. Adding one more unit is going to be a pain, so whatever it is better be worth it. Fourth, the price is too high for an A/V unit. You can get an A500 for $499, and a CD player for $99. That's $600. CDTV should have a street price close to that if it's going to survive, and it should deliver value equal to a CD player and a complete computer, including a built-in disk drive, keyboard, and mouse. Fifth, and last, if it's not a computer, then why does it have keyboard, mouse, genlock, SCSI adapter, disk drive, printer, and modem ports?

"Joe Consumer doesn't want a disk drive in his A/V rack. Besides, it would cost a fortune. The memory card is better."

Au contraire. When you talk media cost, memory cards cost a fortune compared to floppies. Nobody's going to use memory cards anyway, or so say all the CDTV developers we've talked to. As far as manufacturing costs go, you can buy a floppy drive for as little as $40 retail nowadays - OEM costs are even lower. And an integral floppy (in combination with a second joystick port, which is required for many games) would have meant CDTV owners could play most of the Amiga games on the market, which would have been a tremendous selling point. Amiga developers would have gained, too; the simple addition of a 'CDTV Compatible' sticker on their game boxes would have meant thousands of units in additional software sales.

"You just don't understand CDTV. You're a bunch of jerks."

We think we understand CDTV just fine. Incredibly enough, after looking at the currently available software, we don't think most of the people who designed it and developed software for it understand CDTV or what it's good for, which is presenting lots and lots and lots of high-quality information in an easy-to-use format. (As for us being a bunch of jerks, maybe we is and maybe we isn't. Who wants to know?)

"Why make an issue of the caddy? My IBM CD-ROM at work uses a caddy."

The point is, if this is a *consumer* machine, as Commodore keeps preaching, the easier it is to use, the better. The consumer is used to putting his CDs directly into the player. Tandy has a CD-ROM player that is caddy-less, so it's already being done.

"Why complain about the non-standard keyboard and mouse connectors? Joe Consumer doesn't need a keyboard or mouse. And are you guys ignorant of the infrared I/O brick Commodore's going to come out with for a wireless keyboard and mouse?"

We know all about it. But couldn't it have used the same connectors as the current Amiga keyboard and mouse? It seems like a case of 'change for change's sake'. Besides, most of the people buying CDTV right now already own Amigas. It would be nice if they could plug in *all* their current peripherals. Especially since the planned add-ons aren't available yet. (As for the wireless keyboard and mouse... isn't that what killed the IBM PCjr?)

There were other comments, of course, but we're out of space. In any event, despite our misgivings we are finding some things to like about CDTV, and we're committing to continuing coverage in issues to come. (Mort Kevelson continues our examination of CDTV in this issue with a look at the hardware.)

- Mark & Benn

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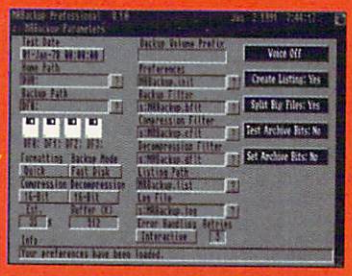

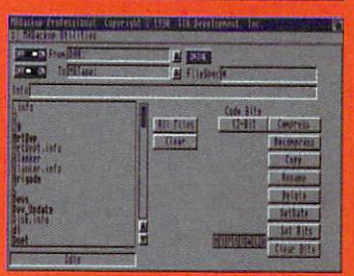

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The first thing Joe Consumer is going to ask when he sees CDTV is, "Why does it cost $900 more than other CD players?" The only reasonable reply to that question is an honest, "It's a computer, too." If Joe Consumer isn't looking to purchase a computer, especially one that he has to buy even more stuff (mouse, keyboard, disk drives, etc.) to use, he's not going to shell out a grand for it.

If Commodore is looking for something to spend its R&D money on, how about standard 8-bit graphics, a built-in de-interlace board for the A2000 that doesn't take up its only video slot, or real CD-ROM drives like the ones Xetec makes. Or, if they just want to spend money, try beefing up customer support so that somebody who buys through mail order isn't told "Oh, well. You should have bought through an authorized dealer." How about some industry standard 1.44 MB floppy disk drives that are backward compatible with the 880K ones? I think Commodore could have spent their money more wisely on any of the above things. If nothing else, they probably could have come out with the A3000T and Workbench 2.0 (which are intelligent choices) much sooner. Fortunately, the rest of the Amiga users can read your fine magazine and know that the entire Amiga community isn't screwed up. Just the parts CBM touches.

- A1C Todd Putnam
Travis AFB, CA

I just finished reading the "hands-on report" of CDTV in the June issue and I felt that I should write and put in my two cents worth.

One thing that bothers me about the way you approach CDTV is in who you think the intended purchaser is. Mark Brown seems to miss the point of the machine. He, as an Amiga owner/user, is not the target. Many of his complaints and perceived shortcomings are coming from someone who is comparing the system to a desktop Amiga, not as a piece of audio-visual equipment sitting in your entertainment unit.

For example, one complaint was in the different style of ports used for mouse and keyboard. It is my understanding that the peripherals that will go into these ports will be wireless. Can you honestly see someone plugging a standard Amiga keyboard into CDTV and adding an extender cable so that he can sit across the room at his coffee table to use it?

Another complaint was the price. Sure, the list price of $995 seems a bit high for the average person. But when was the last time you paid list price? Here in Canada, where everything is quite a bit more expensive, CDTV can be picked up for $1099. Mr. Brown would also do well to note the high number of dollars sunk into Nintendo units. I'm sure that a full Nintendo unit with a reasonable number of games, joysticks, power gloves, and so on would add up to a pretty high figure without even touching the capabilities of CDTV. In fact, if you add up the separate components that make up CDTV (Amiga 500, one meg RAM, CD-ROM, MIDI in/out) the list price starts to look pretty darn good.

As for the complaint of having to put a CD into a "caddy", this is not really a fault of Commodore. The CDTV uses a standard Sony/Philips CD-ROM drive and as such it uses a loading cartridge. Modifying the unit to include a sliding drawer would probably have added too much to the price.

As for the software, let's go back to the first days of *any* new machine. Can you honestly say that the Amiga 1000, C64, original Apple, or IBM had a large and extremely useful software base? In fact, I'm surprised at the number of titles Commodore managed to line up for the machine. It must have been a hard job convincing software manufacturers to put effort into a machine that had not even hit the market.

How can you say that an empty cartridge slot would cost about the same as adding a disk drive? From what I've seen, US prices for disk drives hover around $100. Edge connectors for cartridges probably run an extravagant $1.95. At least they allowed the option of adding a standard Amiga drive for those who want it.

I really believe that the wrong people are reviewing this machine. I would like to see reviews done by *Popular Science* and other lay magazines that would perceive CDTV as a new product to be added to an entertainment system. Having Amiga reviewers comment on the machine is a lot like having car reviewers talk about motor boats. The machines may have the same engine, but the purpose is entirely different.

As for myself, I am looking forward to the release of the A690 for the A500. But I do wonder what they're going to charge for this sucker. It better be no more than the price of a CDTV less an Amiga 500 with one meg.

Thanks for letting me get on the soapbox for a bit.

- Jeff Stimson, Kingston, ON

Thanks, both of you (and everyone else) for sharing your opinions with us. If nothing else, CDTV is proving to be controversial! For more on CDTV, see this issue's editorial page. **- Mark & Benn**

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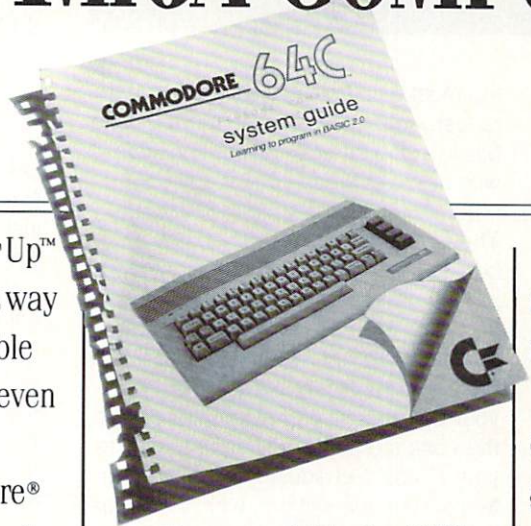

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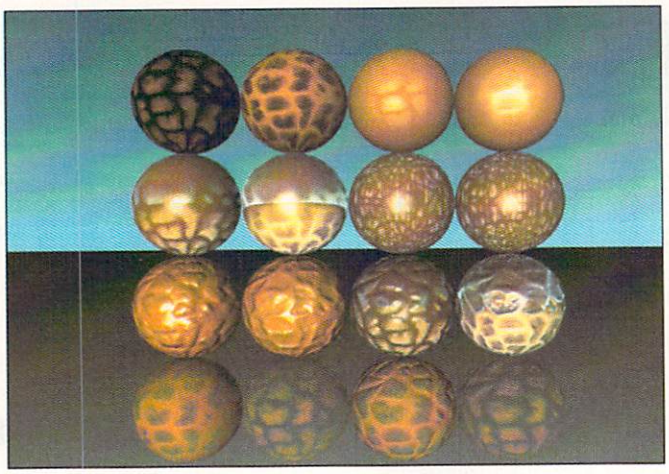

Learn image mapping from a pro with *Map Master.*

MARKOYA-WARE

Louis Markoya has been raising the quality of Amiga artwork ever since he first put hand to mouse, and if you've been wondering how he achieves those wonderful image mapping effects in his graphics, now you can find out. **Map Master for Lightwave** ($99.95) and **Map Master for Imagine** ($69.95) are each three-disk sets incorporating a menu-driven program that displays arrays of objects using all the possible combinations of settings, giving the user visual feedback on what a rendered object will look like. The package also includes 14 scanned, high-resolution organic textures to map onto objects. All of the 3D objects, along with the Scene or .imp files used in the example screens, are included so you can fiddle the settings and get different results. Both versions of the software have the ability to use combinations of image mapping for some truly impressive effects. *Computer Imagery*, 49 Walnut Avenue, Shelton, CT 06484.

MUSIC BOX

One of the most innovative uses of a Nintendo system came a couple of years ago from *The Software Toolworks*. Their **Miracle Piano Teaching System** uses a proprietary keyboard (which can also be used by itself) and software that teaches you to play it. It's the most painless way we can imagine to learn to play music - no more having Miss Crump smacking your knuckles with her ruler when you hit a wrong note - and it's coming to the Amiga. The software is very sophisticated, beginning with a shooting gallery-type arcade game to teach note recognition and progressing in easy stages to fingering, and even into music theory. The system is intelligent, keeping track of your progress (it can also handle more than one student) and tailoring itself to your needs. Scheduled for fourth quarter release, the system, which includes the keyboard, will retail for $479.95. 60 Leveroni Court, Novato, CA 94949. 415-883-3000.

PACKING IT IN

We somehow overlooked mentioning that *Jumpdisk* has released a commercial version of *PowerPacker,* the file cruncher they use to cram so much onto a disk. **PowerPacker Professional** can increase the amount of data you can get onto a floppy (or hard drive, for that matter) by up to 40 percent, though in many cases it can fit the contents of two disks onto one. Pretty impressive. The compression/decompression is fast and it's easy to do. The package includes five utilities to use on crunched data: PPMORE (text reader), PPSHOW (graphics files), PPANIM (animations), PPTYPE (printer output), and DECRUNCH (for restoring files to their uncrunched state). It should be noted that *PowerPacker* works on both data and program files and that crunched command files automatically decompress and run. (As an example, *DPaint III*, with overlays, crunches from 282904 bytes down to 179352.) *PowerPacker* has become something of a standard for telecommunicators, but its uses are far wider than just that. Price is a paltry $29.95. Jumpdisk, 1493 Mt. View Avenue, Chico, CA 95926. 916-343-7658.

STUDY HELP

If you're going to be taking the SAT college entrance exam, or if you have offspring studying for the test, check out **StudyWare for the SAT.** Designed to be used in conjunction with the widely-used Cliff Notes' *Cliffs SAT Preparation Guide* (which is included with the software), the Amiga edition covers 29 SAT topics in 860 questions. There are four full-length exams and the software provides explanations for both right and wrong answers. It uses real math symbols and graphs, along with hints and an on-screen glossary. Progress reports and charts are generated at the end of each test. $49.95 from *StudyWare*, 4760 Murphy Canyon Road, Suite A, San Diego, CA 92123. 619-495-0190.

IN CONTROL

If you're less than thrilled with the controller for CDTV, *Selectech* has an alternative for you. The **AirMouse** is in two pieces: one plugs into CDTV's serial port and the other looks like a two-button cordless mouse without a ball inside. You just aim the thing at the CDTV (you can be up to 16 feet away) and you can then perform the operations you normally would with the CDTV controller, but without all the extra buttons. Retail price is $99, and Selectech will be coming out with other versions of the device for other electronic components like TVs and VCRs. 30 Mountain View Drive, Colchester, VT 05446. 802-655-9600.

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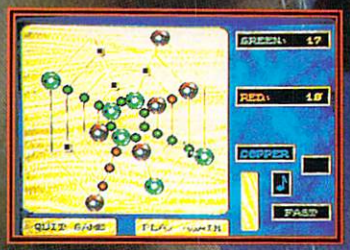

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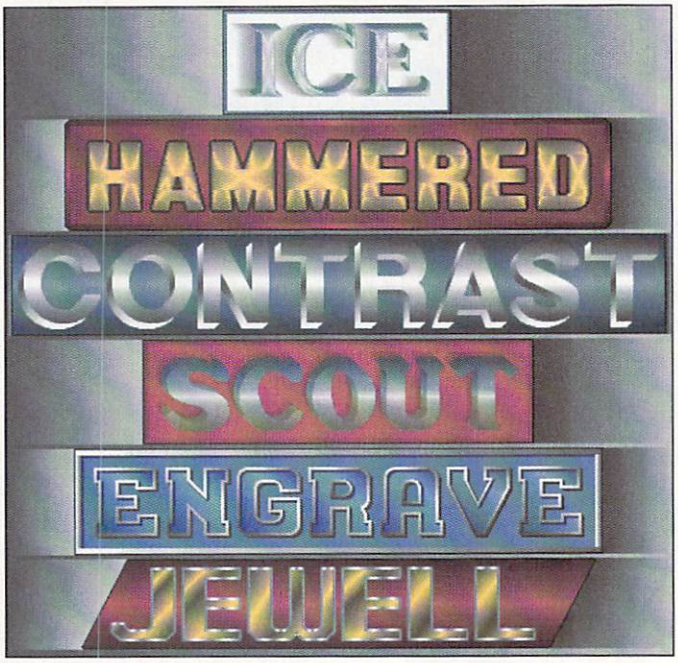


Examples of Shereff System's *Cinnamon Toast Fonts* for the *Video Toaster.*

BUTTERED?

Cinnamon Toast Fonts is a stylishly useful collection of *Video Toaster*-renderable multicolor fonts from *Shereff Systems*. The fonts were created with 24-bit color and then converted down to the *Toaster*'s 16-bit video font format. There are two four-disk sets available, each containing six styles in two sizes ranging from 44 to 64 scanlines. The styles in the first set are Ice, Hammered, Contrast, Scout, Engrave, and Jewell. The second set has Cinnamon, Glory, Gold 1, Lime, News, and Stone. Retail price for each collection is $99.95. 15075 SW Koll Parkway, Beaverton, OR 97006. 503-626-2022.

DRIVING CD

The age of CD is upon us. *Canadian Prototype Replicas* is shipping **CDROM-FS**, an Amiga software file system which can be used with standard Hi Sierra and ISO-9660 CD-ROM drives. The system allows you to hook up most popular flavors of SCSI CD-ROM drives and access them as standard Amiga devices. The software automatically recognizes disc changes and will even sense when an audio CD is inserted. Also included are audio CD control programs that directly support Hitachi, NEC, Pioneer DRM-600, and Toshiba drives. A developers toolkit is provided and the system is compatible with Amiga networks. Cost of the package is $50 Canadian. Check your local dealer for current US price. PO Box 8, Breslau, ON Canada N0B 1M0. 519-884-4412.

COLOR ME ANYTHING

It has been long enough ago that the original **Doug's Color Commander** was released that we thought we'd include the new 2.0 version here in New Products. *DCC* is a marvelously useful universal palette control that works with virtually any non-HAM software. The way *DCC* works is elegantly simple: it sits on your Workbench screen in a tiny window until you activate it, whereupon it offers you a pull-down menu which lists the screens of all the programs you have running. *DCC* then pops the selected screen to the front and puts its palette controller on it, automatically adjusting itself to the appropriate number of colors. *DCC*'s controls are very slick and easy to use, offering full control over RGB and HSV values, along with ranges, copy, spread, and so on. It will also let you save and load a palette as a file, and even works as a screen grabber. Price is $49, and owners of the previous version can upgrade for free by sending in your original disk. *Seven Seas Software*, PO Box 1451, Port Townsend, WA 98368. 206-385-1956.

CD WITH ERASER

Xetec is moving further into optical territory with the release of their **MOx-600 System**. The rewritable optical disk drive is built around the Ricoh erasable drive and can hold up to 600 megabytes on each removable cartridge. The unit is also notable for its comparatively low $3600 pricetag (similar units we've seen go for about $5000). The *MOx-600* comes with a blank cartridge, and additional blanks cost $229 each. That works out to just over $.38 per megabyte - quite reasonable considering what you're getting. 2804 Arnold Road, Salina, KS 67401. 913-827-0685.

NEW INPUT

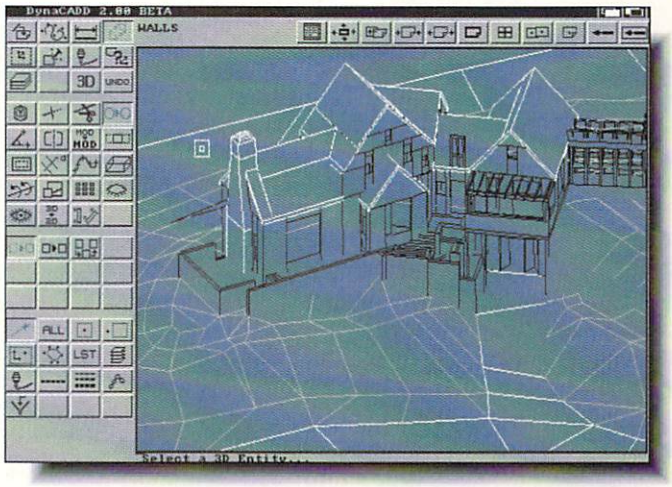
If you've envied those trackballs you see people using on high-end workstations like Sun and Apollo, envy no more. *ITAC Systems* is shipping an Amiga version of **Mouse--trak**. Retailing for $159, the device features an ergonomic design and precision control built around a cast phenolic ball and stainless steel bearings (which makes it heavy-duty, too). It also has the virtue of requiring less desk space than a traditional mouse and mousepad. 3121 Benton, Garland, TX 75042. 214-494-3073.

FRACTALSCAPES

If you've used Virtual Reality Laboratories' *Vista* in any of its incarnations, you've probably wished for some easy way to make your own DEM (Digital Elevation Map) files to render. Well, *MegageM*, the publisher of *FractalPro*, has given us a way to

NEW PRODUCTS

do it. **ScapeMaker** will take any IFF image and turn it into DEM data. There are options for selecting just part of the image, scaling it, and determining the elevation (relief) and/or depth (referred to as incuse). *ScapeMaker* works with all standard graphics resolutions, and the fun part is that you can use it on any image you want. Besides the obvious Mandelbrot screens, you could digitize a picture of Mickey Mouse, run it through *ScapeMaker*, and render it with *VistaPro* into Mickey Mountain. The possibilities are endless! $29.95. 1903 Adria, Santa Maria, CA 93454. 805-349-1104.



Screen shot from *DynaCADD 2.0.*

CHAMELEON EDITOR

Oxxi is shipping a new text editor called **Turbo Text**. It is very quick, reasonably small (169K), and customizable to just about any configuration you can imagine. It's aimed primarily at programmers, but is certainly useful for anyone who needs to enter text. The programmer's facilities are obvious in a glance at the features list, which includes the ability to customize the interface to any compiler, whether it be C, Pascal, Modula 2, or what-have-you. It will also emulate most popular Amiga, PC, and Unix editors. You can have multiple simultaneous views of the same document (useful for comparing chunks of code) and you can also have multiple documents open at once. It supports (a big cheer here) the Amiga clipboard device, one of far too few programs that do, and can also handle vertical blocks. It also includes a hex editing window and has a built-in programmer's calculator. If all this isn't enough, *Turbo Text* also has very strong internal macro recording capability as well as ARexx support. And just in case you're looking for an outliner, it will do that, too. $99.95. PO Box 90309, Long Beach, CA 90809. 213-427-1227.

ARTWORK

Digital Designs Group has a number of graphics and animation library disks available. Among the titles: **Galaxies and Other Worlds**, **Earth and Planets**, and **Video Backgrounds**. Each set comes with a special viewer and production utility called the Digital Displayer, which will let you assign images to hotkeys and then call them up with a keystroke for videotaping or whatever else you want to use them for. There's also a feature that lets you call up an brush and automatically change to its palette. The company is also producing **Construction Sets** of images ready to pick up and then stamp down on your work screen to make such things as flowcharts, borders, charts, characters, and so on. Prices per set is $39.95. PO Box 593, Whiteville, NC 28472. 919-642-6295.

AMIGA LUGGAGE

Taking your Amiga from Point A to Point B is one of the biggest pains there is. Since Commodore hasn't seen fit to produce a portable Amiga, *D. J. Distributing* is at least making our lives a little easier by producing a line of Amiga carrying cases. They're made of black, navy, or gray heavy-duty nylon Cordura padded with foam. They're available for all Amiga models, and there's also one specifically tailored for a 1084 monitor. Prices are in the $70-$90 range. The company also makes lots of other bags for all sorts of equipment. If you have something that needs toting, they probably have a bag to tote it in. PO Box 654, Bountiful, UT 84011. 801-299-1208.

NEW DYNACADD

Ditek International has already announced a significant upgrade to their recent entry into the Amiga CAD market. *DynaCADD* 1.80.02, which began shipping in the second quarter of this year, has been replaced by version 2.0. Already loaded with high-end professional features, **DynaCADD 2.0** boasts a generous list of enhancements including: color PostScript output, 3D solid faces, hidden line removal, full DXF file export/import, 3D object output, in both *Sculpt 3D* and *Imagine* formats, all ready for rendering and animation (*Sculpt* objects are also readable by *Toaster/LightWave*). Version 2.0 is the same price ($995.00 U.S.), and owners of the earlier version may upgrade free by sending their old disks to *Ditek International*. The 2.0 version should be shipping as you read this. Also for free: In addition to the resident *Compugraphic* fonts, *Ditek* also has available, for the asking, a set of CAM fonts which are specially designed for knife-equipped stencil-cutting plotters (like the new *Roland SketchMate*). Ditek International, 2651 John Street, Unit #3, Markham, ON Canada L3R 2W5. 416-479-1990, FAX: 416-479-1882.

NEWS & VIEWS

COMMODORE DOINGS

The Smithsonian is probably the single most interesting place on earth, and Commodore has recently donated three Amiga systems to the Washington, DC museums. The systems are being used to present an interactive videodisc presentation called "Visions of American History: Struggles for Justice Volume 1: African American, Native American, Latino." The title may be a little unwieldy, but at least Commodore's heart is in the right place. The system uses an Amiga 2500/30, *AmigaVision*, an internal genlock, a Pioneer I.D. V2200 laserdisc player, and Scholastic's "Struggles for Justice Volume 1" courseware. We hope this is only the first of many more such exhibits.

WHITHER SUPERBASE?

As we reported last issue, on May 13, Software Publishing Corporation announced it intended to acquire Precision Software Ltd., makers of the *SuperBase* database for the Amiga.

Software Publishing Corporation, based in Mountain View, California, is best known for its Harvard Graphics presentation software for the IBM PC. It ranks eighth among all PC software publishers in the United States. Precision is a privately held company based in Surrey, England.

The fate of Precision's Amiga product line remains unknown. SPC's press release emphasizes that this acquisition is centered around Precision's *Windows* products.

To express your opinion about the future of the Precision product line, write to Fred Gibbons at Software Publishing Corporation, 1901 Landings Drive, Mountain View, CA 94043-7210, phone (415) 335-6440. - John Foust

.info UPDATE

UPGRADES AND NEW VERSIONS

✓ *Blue Ribbon SoundWorks* has expanded their upgrade policy for *Bar&Pipes* (both the original and Professional versions) to include *any* Amiga music software. If you send them the cover of the manual for any Amiga music package along with $99 for *Bars&Pipes* or $199 for *Bars&Pipes Professional*, they'll send you the latest version of their MIDI music package. Blue Ribbon also has three new titles in their Add-on series of support programs for *Bars&Pipes*: The *Tootorial Kit* (love the name!) offers step-by-step instructions and lessons in using the music software; the *Pro Studio Kit* is a new collection of tools, including an articulation modifier, DeFlam, DeGlitch, note converter, note filter, pitch bender, and velocity controller, among other things; the *Creativity Kit* has, to name only a few of the functions, an accent randomizer, riff-chord, auto transpose, auto modulate, an arpeggiator, and - our favorite - Whoopie. Each of the new Add-ons retails for $69.95. 1293 Briardale NE, Atlanta, GA 30306. 404-377-1514.

✓ *Microft Software* has revised their *VidGen* background graphics generator to version 2.0. Some of the new features are drop shadows, continuous scrolling, and shaded backdrops. All standard and custom overscan resolutions are supported and the resulting backgrounds are compatible with all the popular video and multimedia packages. Price is $149.95. Those who bought version 1.0 prior to July 15, 1991 can upgrade to the new one for $50. After July 15, the price for version 1.0 drops to $74.95. PO Box 1072, Exton, PA 19341. 215-642-7638.

✓ *Gramma Software* continually updates their product line and the latest we hear from them is that *Nag*, *Cal*, *Fred*, and *Flo* are AmigaDOS 2.0 compatible and all known bugs have been swatted. *Nag*, the appointment minder, is even more annoying than before (and still very useful), since it now has a feature to nag you about past events that haven't been checked off. Nag, nag, nag. Now it will *never* shut up! Contact Gramma for upgrade details. 17730 15th Ave. NE, Suite 223, Seattle, WA 98155. 206-363-6417.

✓ *CanDo* is at version 1.5 and besides being Workbench 2.0 compatible, it also has a new script editor, better ARexx control, multiple windows, and an expanded variables system for records and arrays. Upgrading from previous versions costs $40. INOVAtronics, 8499 Greenville Avenue, Suite 209B, Dallas, TX 75231. 214-340-4991.

OOPS

✓ We misinterpreted the letter we received from *Jumpdisk* publisher Richard Ramella detailing the activities of an alleged pirate in Wisconsin. Ramella states that he has not filed a civil suit in the matter, though the attorney listed in the News & Views item in our June issue is putting together a civil action "in concert with and on behalf of several firms whose Amiga-specific products are apparently being sold by the firm". If you'd like more information, contact Ramella at *Jumpdisk* (1493 Mt. View Ave., Chico, CA 95926. 916-343-7658) or the attorney (Paul Gratch, 30 W. Misslin, Suite 202, Madison, WI 53703. 608-256-3323). *.info* regrets any confusion the error may have caused.

LET'S FACE IT—MAIL ORDER HOUSES ARE *NOT* ALL THE SAME!

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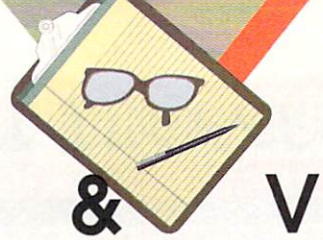

NEWS & VIEWS

SUMMER CES

The latest Chicago edition of the Consumer Electronics Show was one of the more upbeat I've been to in quite a while. The major game publishers were exhibiting all their latest entertainments, nearly all on IBM and/or cartridge machines. However, there's no reason to despair; almost to a title, the games are being ported to the Amiga. *[See this issue's Cyberplay for specifics. - Ed.]*

The most significant product shown at CES was Philips' CD-I machine, which is being sold under the Magnavox label. The $1400 device is direct competition for Commodore's CDTV, and from what I saw, it may have enough potential to blow CDTV out of the electronic water. Though it's difficult to judge from a single demo, the CD-I display seemed to me to be better than CDTV's; it looks like a regular TV picture. It was also announced at CES that Philips had signed an agreement with Nintendo to produce 16-bit games for the machine. The implications of that are enormous; the Nintendo name alone should sell thousands of units. This came as a complete surprise - Sony had been negotiating a similar agreement with Nintendo, even though Sony hasn't announced a CD-based machine of their own. (Sony was actually involved in developing the CD-I standard.) The sudden shift was the hottest item of gossip at the show, and Sony was reported to be very upset by the turn of events. Rumors were flying, of course, that now that Sony has been jilted and reportedly has a huge reserve of cash, Commodore and CDTV would be a likely target for them to take over (or at least reach some sort of agreement with). The software I saw for CD-I is, at least on the surface, very nice. There was an interactive slideshow of paintings that played CD-quality music with the images - the effect was like controlling your own PBS-type TV show. CD-I also has a Sesame Street game for kids that was drawing a lot of attention. It isn't anything that couldn't be done on CDTV, but the very fact that it was finished and running on CD-I was impressive. Philips also told me that they will have a video compression chip available by the time the machine ships in quantity in October, something with Commodore also says is in the wings for an updated CDTV unit.

As for Commodore, they were, interestingly, on the main show floor in the East building of McCormick Place where such industry giants as Panasonic, JVC, Sharp, and Toshiba have their booths. They were showing CDTV, of course, and the placement of their booth is indicative of their efforts to position CDTV as a mainstream box to integrate into living-room audio/video setups. They drew lots of attention.

Before we get too carried away with betting on which format will win out in the end, we should mention that there's a good possibility that neither one will. The day before the show opened, the *Wall Street Journal* ran an article by Partick M. Reilly that opened with the paragraph "It's called CD TV, and electronics marketers are saying it's the industry's Next Big Thing. But some skeptics say it could just as easily be the Next Big Flop." It's just too soon to tell.

There seemed to be fewer new product introductions at CES this time, but that's not too surprising; the recession has caused a major downscaling in a lot of places. The good news is that many companies are starting to see their sales pick up a little. The guarded optimism was good to see.

THE RUMOR MILL

DISCLAIMER: The following are among the most entertaining rumors we've heard the past month. They are presented for your entertainment and amusement only. Please do not make any important decisions based on these rumors, as some will prove to be inaccurate or just plain false.

- SyQuest may be building a plug-and-go version of their removable-media hard drive for the Amiga.
- We should be hearing the 'three million Amigas sold' announcement from Commodore any day now. (By the way, we understand they they are calling CDTV units 'Amigas' for the purposes of counting units sold, even though they hush up the fact that there's an Amiga in a CDTV when they sell it. Go figure.)
- Commodore hints that UNIX may soon be made available on tape for upgraders with 68030/MMU-equipped machines; the price is said to be about $1295.
- After many delays, v2.0 of Kickstart should (finally!) be on silicon by the time you read this. Really. Have we ever lied to you?
- We hear MicroSoft has purchased six Amigas for in-house use. Does this mean *MicroSoft Word* for the Amiga?
- WordPerfect Corp. is said to be 'done with the Amiga.' What this means, according to our .informant, is that *WordPerfect* will not be improved or upgraded, though it probably will continue to be sold in its current incarnation.
- The A3000T tower-case A3000 will be available by the time you read this. Or so we're told.

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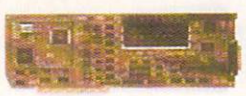

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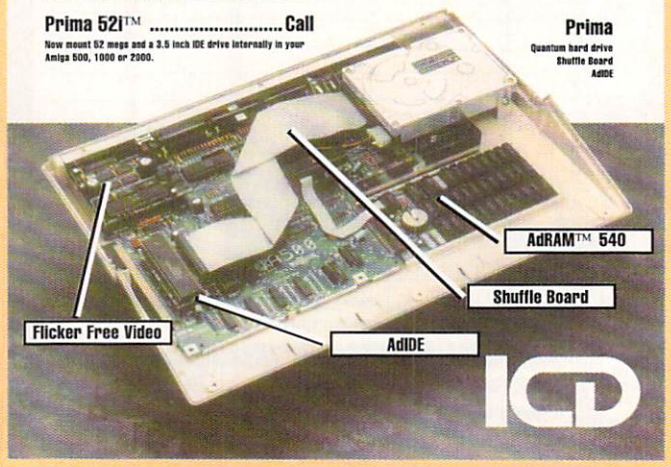

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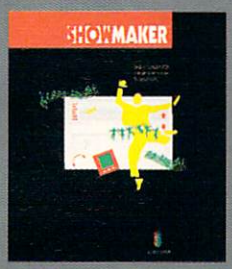

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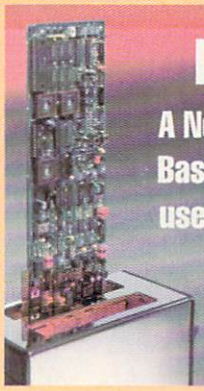

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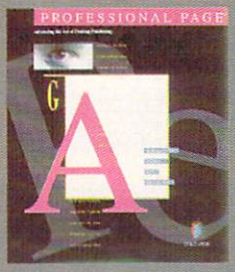

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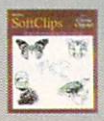

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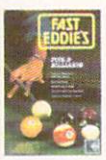

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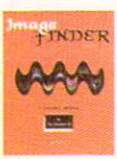

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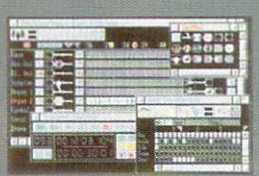

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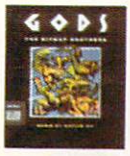

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Modern Day Storyteller

by Steve Jacobs

Fred Wagner sets up his Amiga 1000 for hands-free storytelling.

Steve Jacobs reports on Fred Wagner, a storyteller who uses the Amiga to get kids involved.

The computer room of School 39 in Rochester is filled with a squirming group of computer-savvy fourth graders. But the kids aren't sitting in front of their Apple IIs this morning. They're watching Fred Wagner, a member of the Artist-in-Residence program sponsored by the Rochester City Schools and Project U.N.I.Q.U.E; he's tweaking his Amiga 1000 and the 19" television in front of the room. The computer room is the domain of Bill Gerber, computer teacher and director of 'Do the Write Thing', the city schools' innovative writing curriculum. The students' teachers keep quizzing Bill: "So what's going to happen this morning?" Bill just grins and tells them "Wait and see."

In our interview later, Fred tells me "I got into the Artist-in- Residence program through the Director, Karin Weider. A teacher requests an Artist-in-Residence to work with them in a specific program. Bill Gerber asked for someone working with computers and video to help out with his creative writing program. I decided to go with an approach that would introduce the kids to the idea of interactive television/media and get them thinking about applications."

Fred is an ex-stockbroker. "I got real disillusioned with the profit motive and decided I should be doing something more ethical and moral." He has a BA in 'Music Composition, Electronic Emphasis' and is now working on an MFA in Electronic Media at The Visual Studies Workshop (VSW). VSW is a 25-year-old media access center that provides a degree program in conjunction with SUNY Brockport. VSW has been actively training artists to use the Amiga in all phases of the media process for several years.

"I wanted to work with electronic media," says Fred. "I've always worked with music and sound and so forth, but that's only half the picture. When you talk about any kind of electronic media these days you have to involve video and computers and this interactive kind of ideology, because that's the way its all going. You have to be fluent in all these technologies now because they're all becoming interrelated at some level. I thought Visual Studies would be a good place to put it all together because it was a flexible program where I could work out some new ideas."

Fred catches the kids' attention and explains that in the very near future, people will use their computers and their video cameras to interact with their TVs. Fred moves to the center of the room in front of a video camera. The television monitor shows a solid black shadow, shaped like Fred, surrounded by what looks like white typewriter keys. Fred moves his arms up and down. When his 'shadow image' hits the keys, a sampled cartoon concert of barking dogs, yowling cats, breaking glass and 'hey's fills the air. The kids go wild as interactive hypermedia meets the classroom.

"I'm using an Amiga 1000 and *VIDI Mice* from Tensor Productions. *VIDI Mice* works with *Live!* and a video camera. It allows you to place images of keyboard keys 'in space'. When the video image of your body moving on the television screen 'touches' the virtual key images it triggers whatever event is attached to those keys; in this case, the sampled sounds. There are also mouse applications that are rough and need to be fine tuned, but they do allow you to create 'mouse moves' with your body."

"I use *VIDI Mice* as a master program to run a music program called *Dynamic Drums*. It lets me load 10 different sampled sounds and trigger them with the keyboard. So I have these ten keys preloaded with sound effects or words."

Fred tells a story to the kids, using the sound effects and sampled words as part of the text. It works like this...

"This morning my dog (left arm straight up; "Bow Wow!" from TV speaker) saw a cat (right arm at 45 degree angle; "Meow! Hiss!") sitting in my kitchen window. My Dog (left arm straight up; "Bow Wow!") jumped up on the kitchen counter (left arm at 30 degree angle; sound of bowling pins being knocked down) knocking everything on the floor. Then he jumped through the window (left arm at 45 degree angle; "crash, tinkle tinkle")..."

Most of the kids get a chance to tell their own stories. Some of them have to hold file cards in their hands because they're too short to reach all the virtual keys. Others, seated near the camera and impatient to get a turn, wave their own hands in the air, triggering sounds that conflict with the storyteller's. Later Fred boots a music program and the kids create music in space.

"I have the kids create a storyline using those sounds and words. The idea is to get them thinking narratively with this stuff. I want to create not only a magic thing where they're making sounds from intangible space, but to give them a ready-made creative application, so we aren't talking about word-processing or something."

"I also use *Sonix* to let them play musical notes placed around them in space. I ask them how this is different than an instrument that you hold in your hands. You can always change the way it's laid out and played. Spontaneously, without my mentioning it, they get up and dance to play the music. It gives them a lot of ideas."

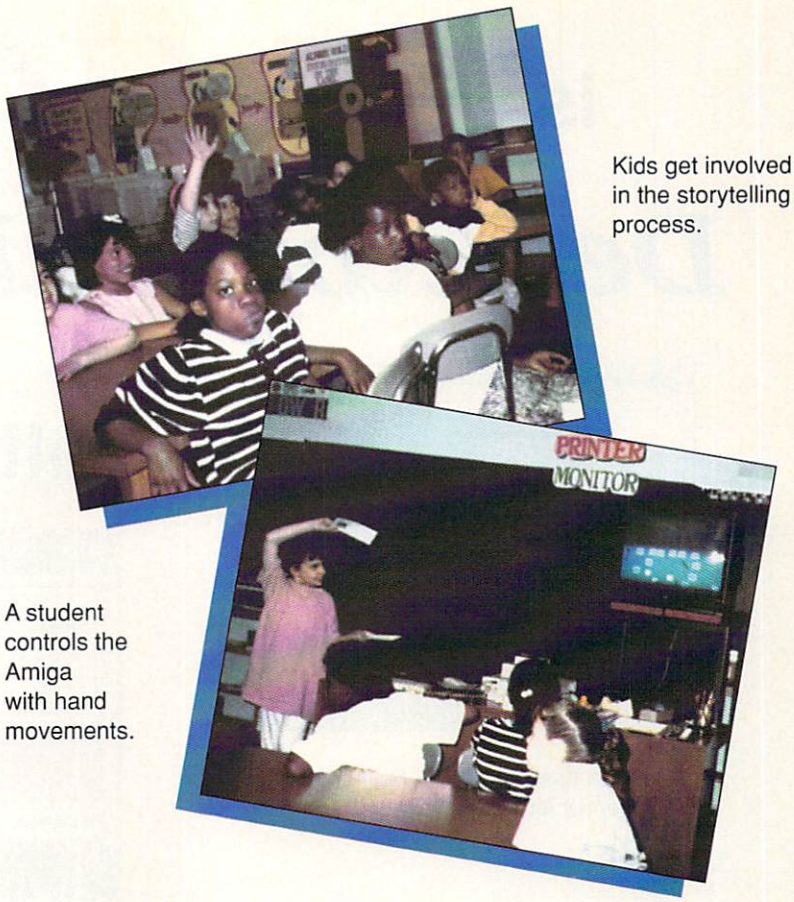
After everyone's had a chance to experiment, the class discusses what they've seen and what kinds of things could be done with the technology.

"I really believe strongly that kids, the ones that are 10 and 12 now, are really going to be the ones to apply this technology. The people who are working in it now are developing the mechanisms, but the kids coming up are going to be the ones who really apply it. To get them thinking about it now while their minds are still fresh and aren't cordoned off by all these 'Concrete Logic Structures' is really important."

"I am really impressed by the kids. They seem to pick up on the fact that this isn't any kind of magic and that it's something they can use. They don't have any of that 'You can't do this because...' in their heads; they just pick it up and run with it. They had ideas about how they could go virtual grocery shopping and have things appear at their door. Some of them came up with the idea of using this to run a factory assembly line. These are fourth graders we're talking about here."

When Fred isn't working with school children, he continues to work on the implications of a performance environment.

"For my own work I use two A1000s with one camera suspended directly above me and one camera in front of me. This creates a kind of 3D interface. I can put different functions on each of the different planes. I can have two programs, two functions, that operate harmoniously. I can place 'hot spots' so that two things will happen when I touch one specific spot. One would happen on the 'wall plane' and something else on the 'floor plane'."



Kids get involved in the storytelling process.

A student controls the Amiga with hand movements.

"The biggest problem is that the two computers that I'm using can't 'talk' to each other or 'understand' what the other is doing. That's the next step. It'll only be a pseudo-3D interface until I can get the two computers to run together and understand the interaction between the planes. I either have to network the two systems together and use ARexx or get an Amiga 2000 and a *Live! 2000* board, because that has two video inputs. But there are financial considerations. (Anybody out there with money who'd care to give it to me, please feel free to do so!) I'm also looking at experimenting with *VOREC* and *Elan Performer*. I'd love to get my hands on *Mandala*, but I don't know where to get one."

Fred will continue to develop his performance environment as he works toward the completion of his MFA this fall. In addition, he's been asked to participate in a curriculum steering conference, 'Goals, Outcomes, Measures and Standards', in Rochester. The school board is looking for artists to help them get a new slant on the education process. Fred should be able to provide them with a suitably alternative point-of-view.

"The best thing about interactive virtual technology is that it forces you to think differently. Because it's so abstract you need to be able to approach it without any preconceived notions about how you would work with it. You have to start with the actions and work backwards. Working backwards from the results helps you develop the process."

'Spontaneously, without my mentioning it, they get up and dance to play the music.'

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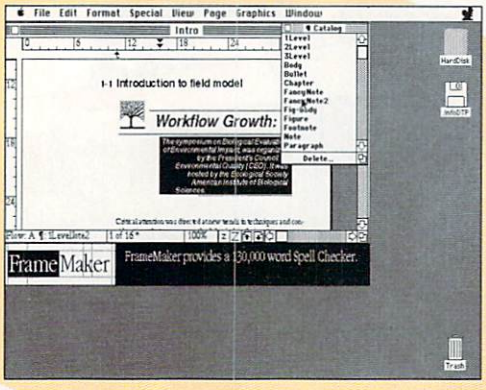
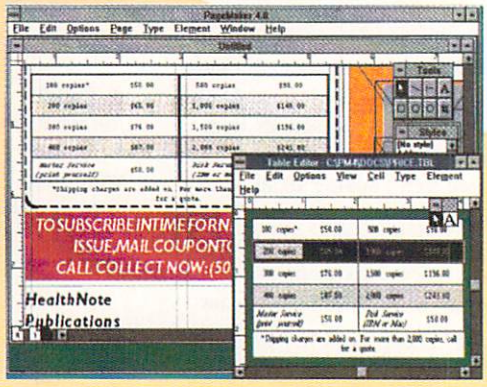


The Macintosh version of *FrameMaker*, the premier long document workhorse.



PageMaker 4.0 for *Windows* and the IBM/PC.

Comparing DTP on Amigas, Macintoshes, and IBM/PCs.

by Daryell Sipper

Today's skilled desktop publishing (DTP) users demand much. No longer satisfied with simple flyers and newsletters, sophisticated users now expect to work across several computer platforms, import and export a multitude of text and graphics formats, choose from hundreds of fonts, and create a variety of projects ranging from simple flyers to four-color brochures to complicated technical manuals.

As the Amiga continues to mature and its user base increases, business users will naturally explore the Amiga as a DTP tool. With a 68030-based machine, several megabytes of memory, a large capacity hard drive, an enhanced chip set, an icon-based operating system, and recently released upgrades of popular publishing software, it would appear that the Amiga is up to the task.

However, the Amiga does have some tough competition. The Macintosh had much to do with developing the DTP market and continues to be a favorite choice for this application. Unix is widely accepted as the workstation solution. IBM and compatibles compete by sheer numbers - roughly 87% of the business computers installed across North America are IBMs and compatibles.

There are several DTP packages available for the Amiga, but only three are considered "heavyweights" - *Professional Page*, *PageStream* and *Saxon Publisher*. Several high-end packages exist for the Macintosh, IBM, and Unix platforms - *PageMaker*, *Ventura Publisher*, *Interleaf Publisher*, *FrameMaker*, *DesignStudio* and *Quark XPress*.

Is the Amiga a viable option in today's DTP market? What are its strengths and weaknesses? Supporters claim that the Amiga is capable of competing. Can it? Let's examine Amiga DTP from several perspectives.

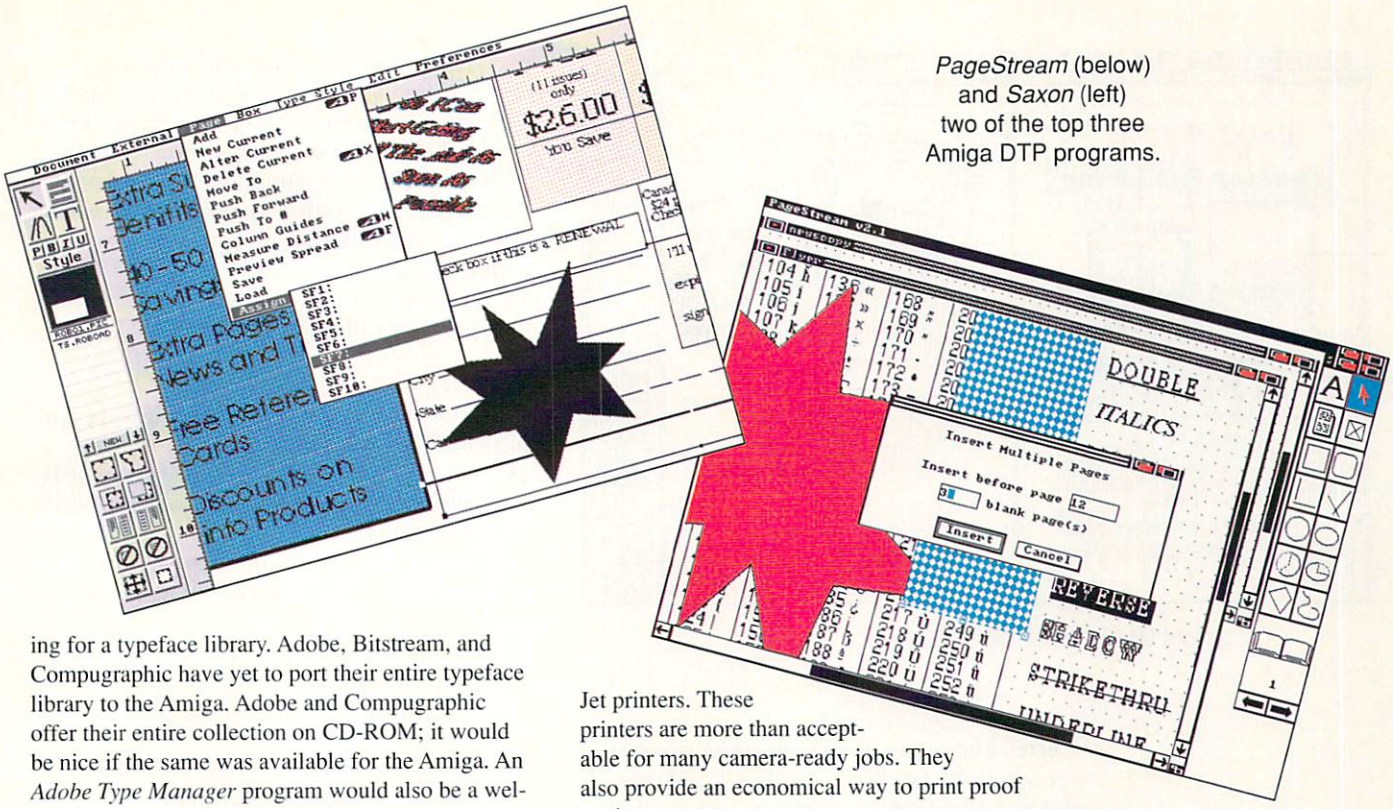
HARDWARE

There's little doubt that the Amiga has the necessary hardware muscle. The A3000, for example, uses a 25 MHz 68030 microprocessor, a 68882 math coprocessor and up to 16 megabytes of on-board RAM. Slap in a 200 megabyte hard drive and two megabytes of chip RAM and your multitasking system will respond like a car with a V-12 engine.

INPUT

Besides using many design tools, DTP software must be able to work with the text and graphics created for publication. All three Amiga packages perform these functions well and are professional in their approach.

Users have an adequate selection of fonts to choose from, but the Amiga platform is still search-



PageStream (below) and *Saxon* (left) two of the top three Amiga DTP programs.

ing for a typeface library. Adobe, Bitstream, and Compugraphic have yet to port their entire typeface library to the Amiga. Adobe and Compugraphic offer their entire collection on CD-ROM; it would be nice if the same was available for the Amiga. An *Adobe Type Manager* program would also be a welcome addition.

Clip art collections could use a boost. The IBM and Mac folks have tens of thousands of professional (structured and EPSF) clip art images to choose from. Some companies offer their collections on CD-ROM. Additionally, popular drawing programs such as *Corel Draw* and *Arts & Letters* are offered with thousands of packaged drawings.

Image scanners are available for the Amiga, though image scanning isn't a big concern. High resolution scanned images consume a tremendous amount of memory on any system. So even in today's highly computerized business world, it's normal to use a low resolution scanned image for position only (FPO). Having your print shop halftone the original image is usually the easiest way to get the best results.

Text scanning is another story, however. Optical character recognition (OCR) is nonexistent for Amigas. With an auto-feed system, Amiga users would be able to scan volumes of text while using their multitasking computer to work on other projects. While Mac, IBM, and Unix users let their computer do the work, Amiga users are still manually retyping text into their systems.

OUTPUT

The whole idea of DTP is to produce something on paper. Printing is well supported by the three Amiga packages, though there are a few minor hurdles. All support PostScript output, including color, separations, negatives, cropping and registration marks, and thumbnail options.

For many jobs, users will use the 300 dots-per-inch (dpi) offered by desktop PostScript and LaserJet printers. These printers are more than acceptable for many camera-ready jobs. They also provide an economical way to print proof copies.

For higher print resolutions, a typesetting service is used. Most service bureaus are dominated by Macintoshes, but many also have IBM machines. Very few have Amigas. This means the Amiga user has to send the final copy to the service bureau as a PostScript file either by modem or on an IBM or Mac formatted disk.

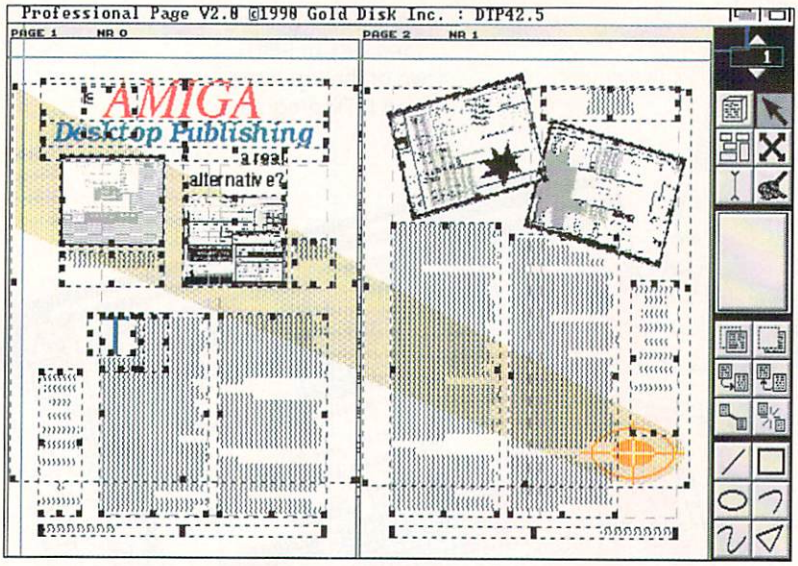
Transmitting the file by modem can take a long time, as a "raw" PostScript file can easily consume several hundred kilobytes of storage. Archiving isn't always the best solution because the possibility of losing information does exist.

A raw PostScript file can easily be too large to fit on one floppy disk. The Amiga user either has to store the file in pieces or invest in removable high capacity storage media. Amiga clients are forced to test their PostScript files since the service bureaus are unlikely to have an Amiga to support on-the-spot touch-up efforts. Mac and IBM users would be in the same predicament if they sent their files as raw PostScript, but they usually don't have to. The service bureau is likely to have the same DTP packages installed on their systems - clients simply save their work as a program file and perform any necessary fine-tuning at the service bureau.

Optical character recognition (OCR) is nonexistent for Amigas.

COLOR CAPABILITIES

Color separations and matching are hot items in DTP. *Quark XPress, DesignStudio*, and *PageMaker* are the popular non-Amiga leaders in this area, but Amiga DTP competes well. Screen (Red-Green-Blue), print (Cyan-Magenta-Yellow-Black), and Pantone Color capabilities are well supported by all of the Amiga packages.



Gold Disk's *Professional Page* for the Amiga.

A wordprocessor file conversion utility (Amiga and cross-platform) is sorely needed.

PAGE DESIGN

In referring to page design, we are limiting ourselves to flyers, brochures, newsletters, and small booklets. All three Amiga packages are more than capable of handling these tasks.

Several standard page sizes are recognized. Several Amiga text formats are supported. Style sheets and tags are standard. Different type styles, point sizes, formatting options, and outline fonts are the norm. Page numbering, master page templates, automatic hyphenation, spellchecking, kerning, tracking, text and graphics rotation, drawing tools, page magnification, and multi-page and thumbnail previews are features that professional DTP users expect and will find in the Amiga.

Traditional Mac and IBM favorites for page design efforts are *PageMaker, Quark XPress*, and *Ventura Publisher.*

FILE FORMAT COMPATIBILITY

The Amiga packages import a variety of Amiga text formats - *WordPerfect, TransWrite, Scribble, Textcraft*, and ASCII for example. Unfortunately, there is no convenient way to translate different Amiga text file formats. Therefore, the Amiga user has to stick with only those wordprocessors supported by each particular DTP package. Worse, Amiga DTP fails to recognize popular non-Amiga industry text formats such as *WordPerfect* and *Word* (IBM & Mac), *MacWrite, XyWrite*, and *WriteNow.*

Image formats vary. There are bitmapped, structured, and Encapsulated Postscript Format (EPSF) graphics. The Amiga packages recognize these formats within the Amiga platform. Yet there are many popular graphic formats available outside the Amiga that aren't recognized, such as PCX, HPGL, TIFF, CGM, GIF, PICT, IMG, and GEM.

This wide array of standard wordprocessing and graphic formats creates compatibility problems for Amiga DTP users. Programs such as *The Art Department Professional, CrossDOS*, and *Mac-2-DOS* can relieve some of the file transfer problems, but not all. A wordprocessor file conversion utility (Amiga and cross-platform) is sorely needed. *Pagestream 2.1* is the first attempt to recognize the many graphic formats the rest of the world uses, and *ProPage 2.0* recognizes IBM *WordPerfect* 4.x and 5.x. Hopefully, this trend will continue. There are simply too many file formats being ignored.

DOCUMENT DESIGN

By document design we are referring to the production of large documents, textbooks, manuals, and catalogs. The Amiga falls miserably short of its competitors in document design. Consider some of the following tasks:

1. Generating and cross-referencing tables of contents, indexes, and lists of figures or illustrations.
2. Constructing and editing data tables. This includes the ability to import standard spreadsheet (*Lotus*) and database (*dBase*) files.
3. Paragraph numbering (common within technical and government documents).
4. Multi-chapter design. Obviously, it would be easier to create and manage a 20-chapter, 500-page manual on a chapter basis rather than as one huge document.
5. Graphics and text linking. Some documents are updated on a regular basis. If the text references an illustration, the entire document has to be reorganized after text revisions in order to keep the text and illustration in close proximity to each other.
6. Generating and supporting scientific and mathematical text and equations, as well as subscripts, superscripts, and fractions.
7. Page numbering options such as the chapter-page numbering system used in many manuals.
8. Making one global change to all pages within a manual. Imagine doing this page by page in a large manual or catalog.
9. Supporting dedicated tasks such as database or catalog publishing.
10. Extending search-and-replace to include user-defined text variables, such as the current date or revision number.
11. Large projects also demand some safety features such as a multi-level undo/redo, an automatic backup file and automatic timed back-ups.

As you can see, there's more to designing complex documents than just presenting a pretty page.

The leaders in document publishing are *FrameMaker, Interleaf Publisher*, and *Ventura Publisher. PageMaker* and *Quark XPress* also offer some basic document publishing features. Unfortunately, the Amiga doesn't measure up.

LARGE PROJECT COORDINATION

It's reasonable to expect large documentation projects to be developed on a network. Writers, illustrators, editors, and document designers all work together, exchanging files via the network. Networking options are available for the Amiga, so it could be used in such an environment.

However, none of the Amiga DTP packages offer multi-user support. Some method of revision tracking and updating is also necessary. For example, an illustrator may update some drawings - the writer needs to know this the next time he or she accesses a text file containing references to those particular drawings. The document designer needs to update the DTP file with the revised illustrations. Some security measures are also required. Most writers wouldn't want illustrators editing their material (and vice-versa), nor should two people be allowed to have simultaneous access to a file.

Amiga DTP Report Card

Hardware	A
Typeface Availability	C
Professional Clip Art	C
Image Scanning	B
Text Scanning	F
Printing/Output	B
Color Capabilities	A
Page Design	A
File Compatibility	C
Document Design	D
Large Project Coordination	D
Platform Compatibility	F
Professional Image	C

PLATFORM COMPATIBILITY

One of the latest trends among the leading software packages, including DTP software, is that they are available across several computer platforms. The files generated from the IBM version of *Ventura Publisher*, for example, can be imported into the Macintosh version and vice-versa.

FrameMaker runs on the Mac, DOS, Unix, and NeXT. *Interleaf Publisher* is available in Unix, DOS, and Mac versions. *Ventura Publisher* and *PageMaker* are available for DOS, OS/2, and the Mac. Needless to say, this platform availability makes a product extremely flexible.

Many Amiga developers are on small budgets compared to their IBM, Unix, and Mac counterparts. They would find it difficult, if not impossible, to port their DTP products over to other platforms (*PagesStream* is offered on the Atari...). *Ventura Publisher* or *PageMaker* would create some competitive pressure if they offered their packages to Amiga users. The flexibility of sending compatible files across the different platforms would be too irresistible, even for faithful Amiga users. *FrameMaker* and *Interleaf Publisher* would have no competition at all.

The next logical step in this trend is interfile compatibility - *Pro Page* importing a *PageMaker* file, for example. This trend is becoming common among wordprocessors, spreadsheets, and databases. Why not DTP software? It's something for Amiga DTP developers to consider.

CONCLUSIONS

The Amiga has the hardware muscle and the associated software to handle complicated page designs. Hardware is competitively priced and software costs less than the equivalent packages on other platforms. Output, color separations, and color matching are not concerns either. The Amiga is competitive in all of these areas.

File compatibility is an important issue. Efforts in this direction must continue. The dominance of Macintosh and IBM within DTP circles is overwhelming. The Amiga market is still too small to ram heads with the competition. A "join 'em, not fight 'em" philosophy is a smart survival and growth strategy. For the Amiga to exist and be respected within the DTP market requires being able to mix and match parts with the dominant technologies. Recognizing the popular industry text and graphic formats would do much to promote the Amiga as a professional DTP platform.

Document management is a genuine concern as more businesses convert their publishing efforts to in-house DTP systems. The demands of a large document or project leave much to be desired with the Amiga. There is simply no way around this realization. The Amiga platform isn't going to mature overnight to the status of *FrameMaker* or *Interleaf Publisher*, but some basic document design tools would be an enormous boost to its potential and credibility.

To compete with *FrameMaker*, *Interleaf Publisher*, and *Ventura Publisher* would require some intensive development efforts. It would also boost the price we would pay for these upgraded packages. Some additional features could be sold as separate modules, similar to the *Quark XPress XTensions*. Price isn't the limiting factor, however, since professional users want power and flexibility and are willing to pay for it.

Asking for platform compatibility is probably unreasonable, but some thought about workgroup publishing isn't, since the Amiga supports networking.

The image of Amiga DTP could use some polish. The three heavyweights of Amiga DTP offer little in the way of sales literature. Again, there are the budget restraints from being small companies, but the disparity is obvious. Ask for literature from the non-Amiga big shots and you'll receive colorful, heavy folders that are overflowing with feature-by-feature product comparisons, press releases, and magazine reviews. Demo disks are also available.

Offering special licenses to trade schools and colleges to get Amiga DTP into the educational ranks would also be a smart image-improving tactic. More Amigas would start appearing in company offices and service bureaus once those Amiga-proficient students graduated into the workplace.

Despite its deficiencies, the Amiga is a tremendous value within a stand-alone environment that concentrates on small projects. Venture outside that environment, however, and you'll quickly feel like you're running uphill into the wind.

The Amiga is still a runner-up in the desktop publishing market. The potential to be a fierce competitor with IBM, Macintosh, and Unix is there, however. Converting that potential into reality would vault the Amiga platform into serious contention for today's desktop publishing demands. Hopefully, we'll continue to watch the Amiga desktop publishing market quickly grow and strengthen.

Part 2 of a two part article on networking. Part 1 appeared in .info #38.

by John Foust

NETWORKING *ON THE AMIGA*

There is little doubt that, in today's computer marketplace, local area networks (LANs) are growing in importance. Each year, more computers are linked together so they can share data and files. Computer pundits have long joked that the "Year of the LAN" will happen the year after the "Year of the CD-ROM." Now that CD-ROM has made it to the Amiga, perhaps it's time for networks to make it big, too.

When it comes to networking, other personal computers have had it good, while the Amiga was left behind. But the situation is finally improving. Here are the networking alternatives currently available for the Amiga.

TCP/IP

Commodore's *AS225* TCP/IP is a descendent of the software once offered by Ameristar Technologies. Ameristar sold its design for an Ethernet board to Commodore as well; this became the *A2065* Ethernet board. TCP/IP requires an Ethernet board.

The *AS225* software includes NFS client software, meaning you can mount volumes that are located on an NFS server. Typically, this server is running Unix, although it is available for other operating systems. Commodore's A3000UX Unix computer can act as an NFS server. These volumes appear in file requesters and the Workbench, although the files are stored on another machine.

In an Amiga-only TCP/IP network, you can't get transparent volume icons. Instead, you can use the CLI-based "ftp" program to transfer files from machine to machine. With it, you can change directories on the remote computer, get lists of files, delete files, and translate text file line endings. Because "ftp" uses standard ARPANET protocols, this remote machine could be around the world if you were connected at a university on the Internet, for example.

At Commodore's West Coast regional sales office, Allen Brooks has a network that includes an Amiga 2000 running both *DoubleTalk* and TCP/IP. The TCP/IP links it to an Amiga 3000UX acting as an NFS file server. The *DoubleTalk* network is connected to several Macintosh computers. Through NFS, the Amiga 2000 sees a volume that's actually on the Unix-based Amiga. By publishing the NFS volume name to the AppleTalk network, Brooks can access the Unix hard disk from his Macintosh. The Amiga acts as an intermediary bridge between the formerly incompatible networks - all the while, multitasking on the Amiga allows it to be used for other tasks.

TCP/IP is designed for Unix users. For installation, it requires background in the terminology of TCP/IP networks, NFS, and Unix in general.

TCP/IP sells for $199.00. The *A2065* Ethernet board is $349.00.

PP&S DOUBLETALK

The Macintosh computer has networking abilities right out of the box. Called AppleTalk, this networking software allows Macintoshes to easily share laser printers and even files through AppleShare. Dedicated Macs can act as file servers, and laser printers act as print servers, accepting print jobs from other machines. AppleTalk is available for the PC, too, and Apple hopes to expand it to mainframes and workstations.

Progressive Peripherals and Software offers *DoubleTalk*, a hardware and software combination to make Amigas compatible with Macintosh AppleTalk networks. According to Progressive vice-president Sean Moore, *DoubleTalk* has been very popular among desktop publishers. Suddenly Amigas can connect to existing Macintosh networks, sharing printers and hard disks. With the growing popularity of "copy and print" shops centered around copying machines, laser printers, and Macintoshes, it's easy to see how this is true.

DoubleTalk makes it possible to "publish" hard disk volumes and to "assign" logical volumes and peripherals to other users on the network. These volumes appear in file requesters and on the Workbench, meaning it integrates seamlessly with existing programs. It also includes utilities for managing electronic mail, print servers, and security such as password protection of volumes.

For Amiga-only networks where AppleTalk compatibility is not paramount, *DoubleTalk* offers a mode that doubles the speed of transfer, speeding the process when it comes to moving large files around.

DoubleTalk comes in several configurations, and the hardware and the software are bundled together. The A2000/A3000 board and software is $449.95. An Amiga 500 version sells for $495.95. All versions come with a "PhoneNet" connector.

SYNDESIS TSSNET

Syndesis's *TSSnet* lets Amigas enter networks that use Digital Equipment Corporation's DECnet protocol. DECnet networks are more common among large companies and universities which link together VAX mainframes at many sites at distant locations. DECnet is available for the Mac and PC under the name *PathWorks*. Other vendors sell a version for Unix. With DECnet, all computers on the network can act as both servers and clients. *TSSnet* can link Amigas to Amigas, too.

Like TCP/IP, *TSSnet* uses CLI utilities for copying and renaming files. It does not have mounted volumes for accessing files on other computers. Instead, the TSSnet file maintenance tool called "NFT" translates between AmigaDOS, Unix, and VAX naming conventions for directories and files. People accustomed to VAX VMS commands can use the filename style most familiar to them.

TSSnet includes a "virtual terminal" ability that gives a noise-free terminal connection for logging into remote computers. By intercepting calls to the Amiga's serial.device, it can work with any existing telecommunications program, allowing many types of terminal emulation. *TSSnet* includes utilities for remote printing, DECnet electronic mail, and security management.

It's possible to run DECnet over a serial port or a modem connection to a VAX mainframe link that was previously used as a terminal, or to another Amiga. *TSSnet* is compatible with all of the Ethernet cards available for the Amiga. It sells for $395.

GFXBASE XWINDOWS

Although not strictly networking software, XWindows plays a big part in where the Amiga is heading when it comes to networking. XWindows is now omnipresent on today's workstations. Think of it as a portable user interface - with X, a program's interface can be displayed on many different types of computers, including the Amiga, even though the program itself is executing on another computer. Compare this to Intuition, where a program's user interface is inextricably tied to being displayed on the same Amiga. An X application can run on a vastly more powerful mainframe computer, yet display a friendly mouse-and- window interface on a personal computer.

In the X market, an XWindow-equipped Amiga competes favorably against dedicated X terminals. The Amiga offers local multitasking processing power for wordprocessing, graphics, and video, at a price much less than a comparably capable Macintosh or PC, and a price not much higher than an X terminal. Plus, dedicated X terminals cannot run local client applications. (XWindow terminology seems turned around in one respect: An Amiga runs an X Server, while the application program is called a "client," reversing the popular computer usage of "server" and "client.")

GfxBase's *X11* XWindows runs under AmigaDOS. It opens its own screen. GfxBase also sells the three-button mouse that many X applications expect. With the X Toolkit, Amiga programmers can develop XWindow applications that run on the Amiga, yet can display their user interface on other machines such as Unix workstations. Or, the user interface can appear on the same Amiga.

Amiga *X11* XWindows is available for $395.00.

UNIX X

Commodore also offers the Amiga 3000UX workstation with XWindows under Unix. In fact, Commodore was the first company in the entire computer community to release a version of System V Release 4 Unix. SVR4 Unix hopes to become a standard for the presently fragmented Unix mar-

ket. Commodore hopes its Unix will be a part of this newly standardized market. It also brings the promise of a high-resolution 1024x768 screen in 1024 colors with the A2410 Lowell graphics board.

HYDRA SYSTEMS A-NET

What has become of Hydra Systems' networking product? Great Valley Products was selling Hydra's Ethernet board and its Amiga-to-Amiga networking software until a few months ago. According to Greg Garnick, vice president of sales and marketing at Great Valley Products, GVP terminated their relationship with Hydra in April 1991 after problems with technical support and updates to the software for AmigaDOS 2.0. At presstime, Hydra Systems could not be reached for comment.

NOVELL NETWARE

Novell's NetWare software looks poised to be very popular and potentially very profitable for Amiga system integrators. Commodore and Oxxi have been cooperating for more than two years to to prepare it for sale. At the time of this writing, its future remains uncertain, according to Commodore. It is not known when it will be released.

Ken Jacobsen, a senior systems engineer at Novell's Schaumburg, Illinois office, has been beta-testing the Amiga version of NetWare for more than six months. At first, he says, "it got lots of laughs from my peers." Novell is a temple of PC gurus. Jacobsen, an off-hours Amiga fan, has installed three Amigas within the Novell office. Beyond the Amiga 3000 on his own desk, he's placed an Amiga 2500 (with AT Bridgeboard) and an Amiga 3000UX Unix machine in the company's demonstration area. NetWare runs on both the PC and Amiga sides of the A2500, meaning this box holds two Ethernet cards. The Amiga 3000UX interacts with the NetWare 3.11 NFS file server, meaning it's running both TCP/IP and NetWare at the same time.

Novell gurus stopped laughing when they saw the Amiga's multitasking in action. They typically spend a lot of time tweaking the performance of file servers using programs such as "FCONSOLE" and "SYSCON". On the PC, of course, these programs take over the machine. On the Amiga, they can run "FCONSOLE" on the BridgeBoard, and pull down a screen and continue to work with other network maintainence tools available on the Amiga side.

According to Jacobsen, the Amiga NetWare compares well with the PC and Mac versions. Amiga NetWare can share files at speeds similar to the other versions. Its biggest attraction, he said, is the option to use both CLI and Workbench-oriented versions of many NetWare tools. These tools aren't available in the Mac version. While this feature attracts the Novell gurus to the Amiga, others are following in their footsteps. More and more PC users are attracted to the multimedia aspects of the Amiga, and Novell NetWare can let them add one to their existing networks. Jacobsen estimates an Amiga can be installed into an existing NetWare network in less than fifteen minutes.

Finally, it is important to stress that NetWare retains one important characteristic of its PC origins. It is a server-based system, meaning all shared files must reside on the hard drive of a central computer dedicated to the task of storing files and managing the network. Without multitasking, PCs never had the power to act as both clients and servers on a network. At this time, Amigas cannot act as NetWare file servers, meaning any NetWare-based network must have a PC at the center.

What will a Novell system cost? For the server, buyers typically choose the most powerful PC they can afford, to get the raw processing power to respond quickly to network requests. Also, large amounts of RAM aid in buffering most-recently-used data for quick re-transmittal, as opposed to fetching the same data from a relatively slow hard disk. Pick a fast PC, a large hard disk and a NetWare server license, and it's easy to spend $8,000. Commodore's price for the client software looks quite affordable, unofficially priced at less than $200.

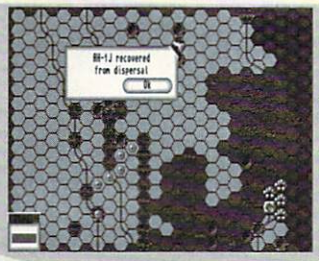
COMPANIES

Commodore Business Machines, 1200 Wilson Drive, West Chester, PA 19380, 215-431-9100

Progressive Peripherals & Software, 464 Kalamath Street, Denver, CO 80204, 303-825-4144

Syndesis Corporation, N9353 Benson Road, Brooklyn, WI 53713, 608-455-1422

GfxBase, 1881 Elwell Dr, Milpitas, CA 95035, 408-262-1469



Brigade Commander

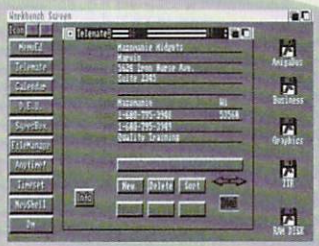
Brigade Commander is a real time war game pitting the player against a computer opponent. It thinks and acts on its own, in real time. Units maneuver and attack under their respective commanders. Brigade Commander has a built in unit/ scenario editor, multi-screen maps, utilizes full digitized sound, and has animated weapon firing. Desert Storm Data Disk Included.

Dedicated to the Men and Women who haved served or are serving in the Armed Forces of the United States of America.

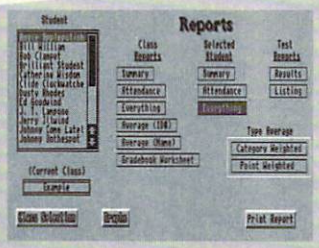
We would like to just say thank you!

Workbench Management System v2.0

Workbench Management System (WMS) is a revolutionary new idea in software for the Amiga computer. WMS is designed to meet the needs of the new and experienced user alike. In WMS we created a friendly and easy to use system that requires a minimum amount of work and very little time to learn. WMS is a button concept that requires only a single click to execute an application. Before WMS, you needed to open your disk and drawers to launch an application, NOW a single click launches your application!



Teacher's Toolkit



A Complete Classroom Management System

Teacher's Toolkit takes the drudgery out of the everyday paperwork tasks by providing an integrated set of tools with a special emphasis on ease of use. With the Teacher's Toolkit, the classroom teacher can manage grades, analyze student and class performance, compose lesson plans, keep appointments, write notes to parents, and keep track of important phone numbers. Teacher's Toolkit offers unprecedented flexibility, supporting the needs of the elementary, secondary, and college teachers. The gradebook handles an unlimited number of students and supports both point and weighted-test grading systems.

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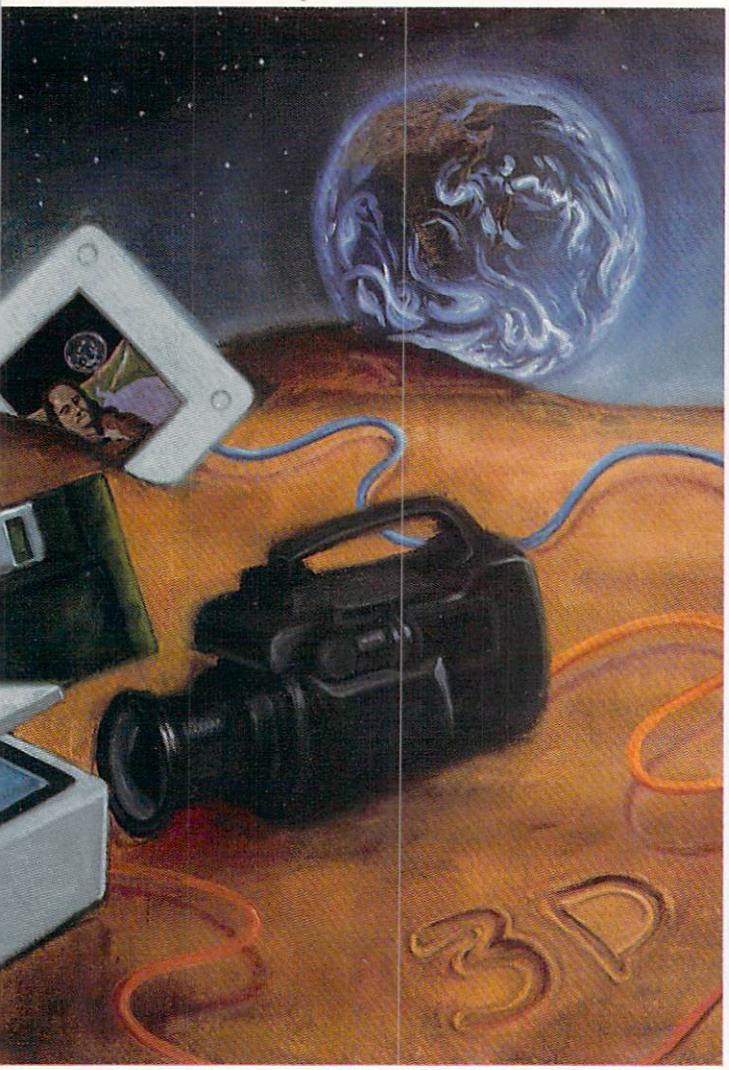

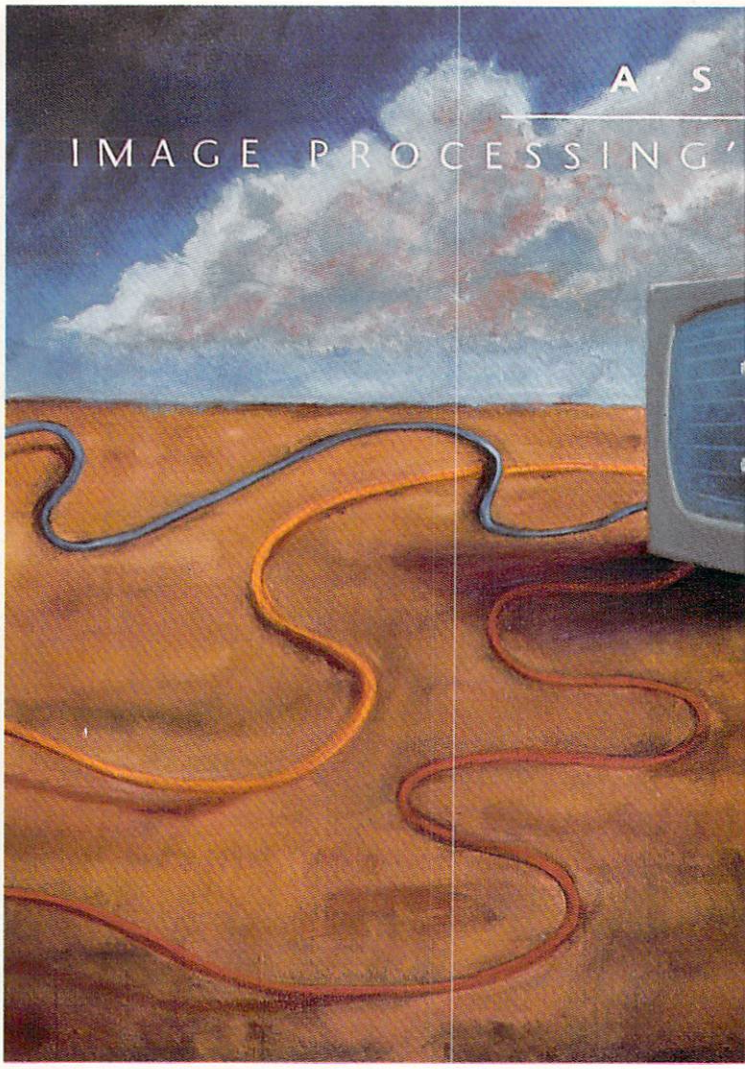

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*TIFF and TARGA support are part of the professional conversion pack. Available separately.

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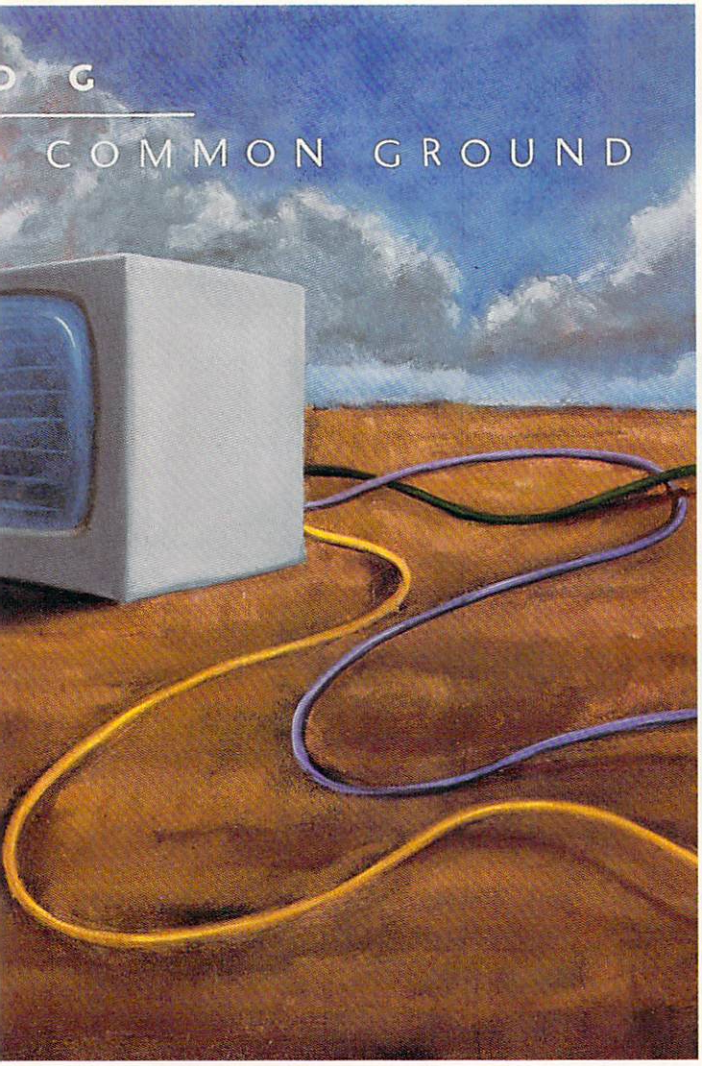

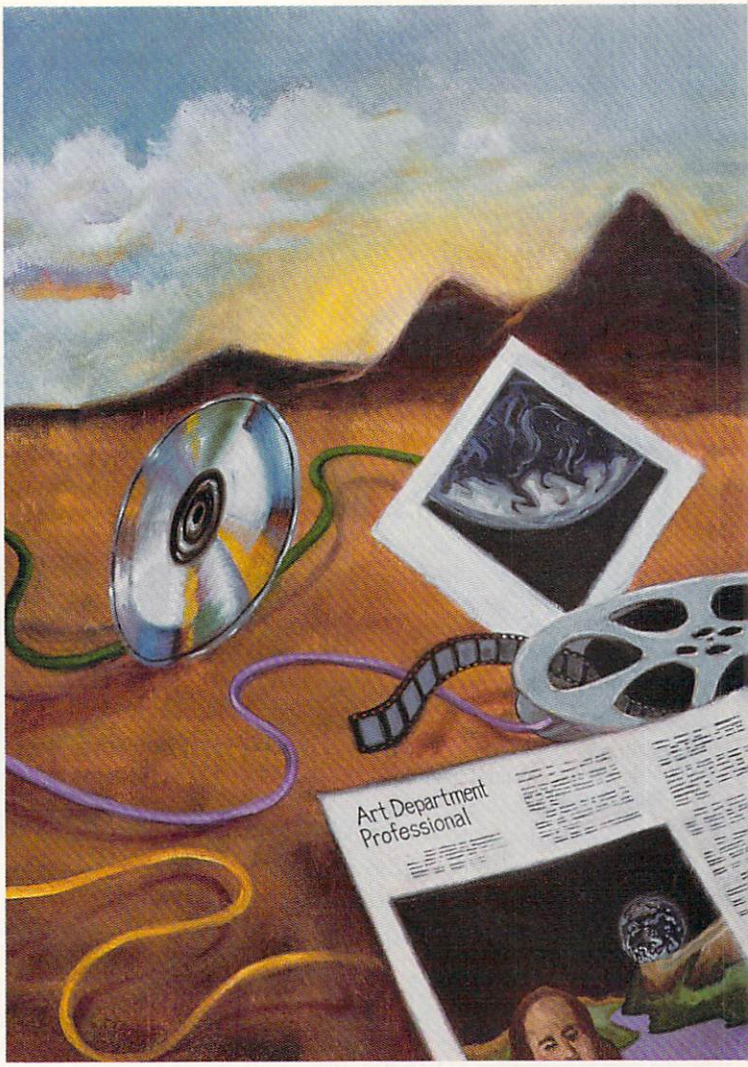

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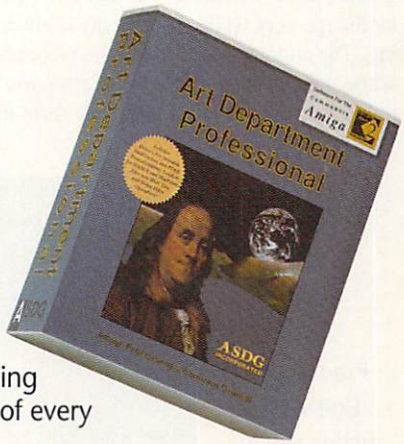

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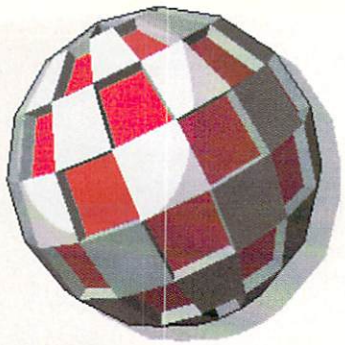
CyberPlay

by Tom Malcom



Incredible ★★★★★ Very Good ★★★★ Average ★★★ Poor ★★ Drek ★

Summer's here and the time is right for some dancing in the streets...Oops, I mean oiling up the joystick and booting some games. Summer means CES Chicago, and the news from game publishers is encouraging. Nearly everything was being shown in IBM format, but virtually every title is being converted to Amiga format, and the publishers seem to be listening to what Amiga gamers want. Graphics, sound, and gameplay are all undergoing dramatic improvement. It's a little sad that the improvement has to come via VGA graphics and Ad-Lib sound boards, but hey, we'll take it if it means better games. We should be seeing the first of the new introductions and conversions in time for Christmas. In the meantime, here are some of the games I've been looking at lately.

Shooting down mechanical prehistoric bird-things in *Stellar 7.*

Stellar 7

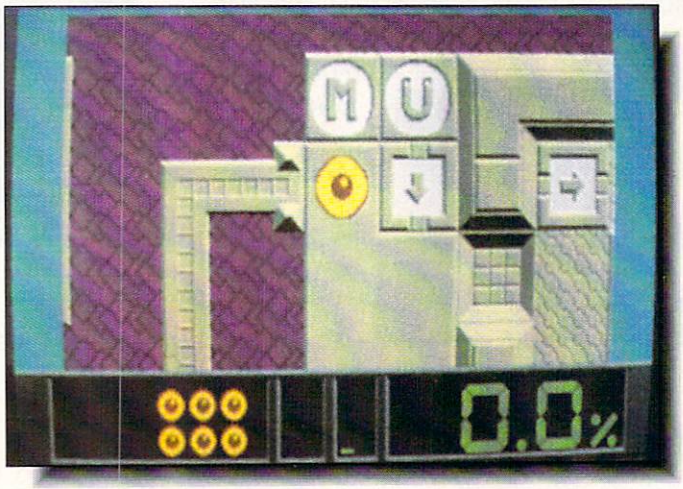
★★★+

Dynamix/Sierra, P.O. Box 485 Coarsegold, CA 93614, 209-683-6858

Aside from one major annoyance, *Stellar 7* is one of the better entries in the vector-graphic field. It captures the feel of an alien landscape very well, and the play is absorbing. The annoyance comes in the fact that while there's a hard drive installation routine, I wasn't able to actually play from the hard drive. A requester pops up telling me that the game requires one meg to run and that if I'm having problems getting it to run on a machine with more than one meg of memory, to please try playing from floppy. Well, my A2000 (plain-vanilla, with no weird boards or attachments) has three megs and it still wouldn't run. The fact that Dynamix put in the requester tells me that they knew about the problem but didn't think it was worth fixing. For shame!

The graphics are, for solid-modeled fare, better than average, and have an adjustable level of detail. I found that while the play does slow down at high detail, it's still quite playable. The slowdown also helps in learning how to control the game, giving you more time to figure out how to work everything. The game itself is pure arcade, with lots of enemy-blasting and a decidedly *Starglider*-ish feel. There are some entertaining interludes featuring a galactic overlord who sounds just like Darth Vader's evil twin. (Can Darth Vader *have* an evil twin?)

If you don't mind not playing from hard drive (to be fair, it may work just fine on your configuration), and if you like space-opera vector graphic games, *Stellar 7* is worth adding to your collection.



Free Spirit Software pushes you to the edge in *Abyss.*

Abyss

★★★★

Free Spirit Software, 58 Noble Street Kutztown, PA 19530, 215-683-5609

One of the weirder games and more pleasant surprises to pass across my desk lately, *Abyss* is a radical departure from Free Spirit's usual fare. The game is a German import and while it does have a rather silly plot having to do with bouncing rubber bunnies, it's best taken as an abstract arcade game. Basically, you guide a bouncing disk (it looks sort of like a flying saucer) around a large, scrolling playfield. The play is something like a computerized version of tiddly winks, where the object is to bounce a little disk into a hole. Of

course, you have to avoid different types of traps and try not to fall through a hole or off the edge of the playfield into the, er, abyss. There are all manner of other things going on, too, and attributes and tools to use as well. The whole thing is rather difficult to describe, but lots of fun in the actual play.

There are a couple of things I would change. The manual could be much better; it needs illustrations of the various objects you'll encounter, rather than listing descriptions of them. However, the game has a demo mode that will show you most of what you need to know. I also noticed a couple of small glitches in the scrolling, though they're not serious enough to detract from the play. The game is easy to learn but difficult to master, so it will keep you coming back for another try. I'm also not terribly fond of the colors used for the bouncing disk, but that's just a matter of taste. Still, even though the graphics are very good, I'd like to be able to change some of the colors. If you like the abstract and interesting, with a liberal dose of compulsive playability thrown in, give *Abyss* a try. I know it will be staying near the top of my game pile.

The Secret of Monkey Island

★★★

Lucasfilm/EA, 1820 Gateway Drive
San Mateo, CA 94404, 415-571-7171

There are two things I can't stand in games: boredom and blatant egotism. *Monkey Island* has them both. Much like Lucasfilm's other masterpiece of ennui, *Loom*, playing *Monkey Island* involves a mouseclick every five or ten minutes, with the intervening time spent watching slow, jerky animations and reading lines of dialog that appear on the screen at a pace equivalent to the average glacial retreat. The ego comes in the form of paranoid, legal-department-mandated trademarking. The game takes place on Melee Island™, and the trademark symbol is appended to every occurrence of the name, something only slightly less ludicrous than Commodore's use of a copyright symbol after their name in press releases. C'mon, folks, get your egos and your lawyers under control.

The Secret of Monkey Island: You can't buy a shovel if you haven't got any money.

As graphic adventures go, I'd put *Monkey Island* toward the bottom. The concept of an inept, wide-eyed innocent trying to become a pirate isn't anything that hasn't been done a few hundred times before, though to the writer's credit, it is handled here with wit and high good humor. The problem is the creaky mechanics of trying to play it. Lucasfilm continually toots their own horn about their "unique point 'n' click interface". It's unique only in the sense that I hope it's the only one of its kind I ever see. I suppose IBM gamers would find it slick, but for Amiga gamers it is simply awkward. Lists of actions appear at the bottom of the screen, with individual items highlighted by moving the mouse. Unfortunately, the programmers couldn't seem to handle a system faster than an 8088-based PC and the highlight tends to stray from where you're pointing. It's easy enough to get used to, but it's another indication of just how foreign the Amiga is to Lucasfilm.

The graphics are standard sub-par, garish CGA, while the animation is the standard IBM-abominable. One of the elements of this game system is that in many places, you can move across a background that scrolls automatically to show more of the location. On second thought, I really wouldn't call it scrolling. It's much more of a hiccup-and-jerk motion. Given the fact that it's elementary to get the Amiga to scroll smoothly, the result is embarrassing. I also get very annoyed with the character animations. They're not only lethargic, but there seem to be about two frames for each one, especially when someone is talking. It's unconvincing and comes across as amateurish.

There are a few things I do like about Lucasfilm adventures, and this one in particular. The stories have a strong element of humor and the music (they don't seem to know much about sound effects) is generally very good. I also like the cinematic elements: changing camera angles, creative staging, and imaginative settings. It's just too bad they can't come up with graphics, animation, and playability to match.

I'm afraid it's time for Lucasfilm to wake up and realize they need go back to making movies. They've been releasing weak products for too long now to have the excuse that they're still learning how. I don't suppose kids would notice the flaws, but for grown-ups, there are too many to overlook. Computer games are evidently beyond the limits of their otherwise formidable talents.

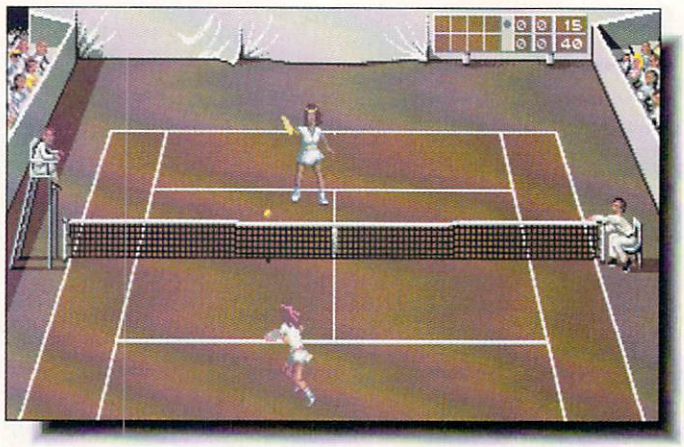
World Class Soccer

★★★+

U.S. Gold/Accolade,
550 South Winchester Blvd.
San Jose, CA 95128, 408-985-1700

Beginner's luck is a terrible thing. I made two goals in the first five minutes of playing *World Class Soccer* and then spent the next two hours trying unsuccessfully to make

➡



Look out Steffi Graf! You'll have a rough time of it in *Pro Tennis 2*.

another one. Aaaarrrggghhh! *WCS* isn't the greatest sports simulation ever written, but it has the virtue of being one of the more playable. There isn't a lot of setup overhead (though you have full control over the teams, the individual players, and the formations they use), and getting into the play is quick. *WCS* will let you play anything from a single game to a full international tournament. The joystick control is reasonably responsive, but after I played for a while, it struck me that I'd like to try using my mouse. Unfortunately, that's not supported.

The soccer field is much larger than the screen, but the chalk lines make it fairly easy to keep track of where you are, and the programmers have done a good job of keeping the action centered. The view of the field is from overhead, but with enough perspective to make it easy to see. The active player is denoted with a flashing arrow, a method that at first I thought I wouldn't like, but quickly found to be very workable. The play's the thing in *World Class Soccer*, but keep in mind that soccer is the only game it plays. Non-soccer fans will probably get bored pretty quickly, but soccer fanatics will certainly find it worth spending some hours with.

Pro Tennis Tour 2

★★★★

UBISoft/EA, 1820 Gateway Drive
San Mateo, CA 94404, 415-571-7171

Many years ago, I tried playing tennis a time or two before I decided it involved too much hard work and perspiration. Now I can boot up this game and get the same effect without sweating through my tennis togs. *Pro Tennis Tour 2* isn't quite the same as playing for real, but it has enough detail, options, and conveniences to make it involving. The graphics are good, but the animation is even better. The little players even sway back and forth as they're waiting for a shot. You can play against another human (assuming, of course, that you're a human, too) or the computer in either singles or doubles, and you can play in everything from a single game to a big tournament. You can also practice against a ball machine, which I'd recommend just to learn the mechanics of playing.

I've played any number of tennis simulations over the years, and this is the most playable of them. It doesn't require complex joystick movements, nor a great deal of precision. Instead, it lets you get into playing. Good stuff for tennis buffs, and non-tennis gamers, too.

AD&D Eye of the Beholder

★★★+

SSI/EA, 1820 Gateway Drive
San Mateo, CA 94404, 415-571-7171

Why is it that nearly all fantasy & role-playing games these days look and act like *Dungeon Master*? *EOB* certainly does, except that this time the walls are red instead of grey. If you like *DM*, you'll like *EOB*, but if you're as tired of seeing one *Dungeon Master* clone after another as I am, you'll want to look elsewhere for something to spend your playtime on.

To SSI's credit, they've done a better than average job on *EOB*. The graphics are crisp and well-drawn, which is understandable since Rick Parks had a hand in them; he's one of the best Amiga artists around. The intro music is fine and the sound effects are well done, though I'd like to have had a few more of them just to add to the atmosphere. The controls for *EOB* are easy to use and while hardcore FRPGers will probably find them too simplistic, I think they make the game more accessible than many of SSI's previous releases. In fact, I'd rate *EOB* as suitable for beginning adventurers and a good introduction to the genre. Unlike a lot of FRPGs, you aren't beset with combat after

AD&D, Eye of the Beholder, another romp in another dungeon.

combat at the outset of the game, making it considerably easier to get into than most. There are plenty of monsters, but at least you're given a decent chance to survive them. I only wish I hadn't seen so many games just like *Eye of the Beholder*; I probably won't even remember it in a day or two.

Interceptor

SSI/EA, 1820 Gateway Drive
San Mateo, CA 94404, 415-571-7171

The full title of this product - I'm refraining from calling it a game - is *Renegade Legion: Interceptor: The First Line of Defense*. My first line of defense is not putting its disk in the drive. *Interceptor* is ostensibly a space-based strategy/wargame, but in reality it's space-based strategy/wargame bore. The graphics are atrocious and the sound nearly nonexistent - what few sound effects are used are very poor. Licensed from FASA's boardgame, this is one of those conversions that should have been left on paper.

Besides being anti-entertaining, Interceptor doesn't work properly. It was obviously ported from the IBM version (and I doubt that one was any better) and it plays like it. There are lots of on-screen buttons to push, but unfortunately the programmers didn't understand how to read mouseclicks; clicking on most items either doesn't do anything at all or has an effect only after a considerable delay. However, you can hit the appropriate key on the keyboard and things work just fine. The manual has all sorts of technical details on the ships and their pilots, but absolutely nothing on how to play it. I suppose seasoned wargamers could figure it out, but anyone else will find it nothing but frustrating.

Interceptor. Leave this strategic board game on the board.

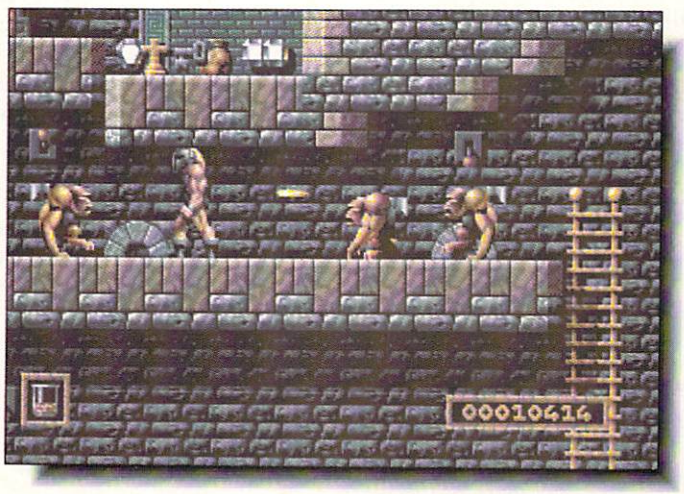
Strategy games are often some of the best computer entertainments, but *Renegade Legion: Interceptor* is one of the very worst.

PD TREASURES

I don't ordinarily talk about PD games in *Cyberplay*, but there are two of them on the nets that are worth drawing attention to. The first is a true antique. *Dungeon* is the adventure that started it all. As soon as I saw the first line "You are standing in a field west of a white house..." I was off again. This is the game that became *Zork* and entranced millions of computer users. Besides being historically significant, *Dungeon* is still one of the best text adventures ever written. It is slightly different from *Zork* in that there are only two sections; the first is a mixture of what became *Zork I & II*, and there's an Endgame, which became *Zork III*. [If you want to go directly to the Endgame, type in INCANT, JOHN GEMWKQ.] I know my way around *Zork* by heart, even after all these years, and while *Dungeon* is very close, some sections are a bit different. Not much, but enough that you'll want to draw new maps. *Dungeon* is snotty, flippant, rude, funny, challenging, and a thorough delight. The parser is a step below the one Infocom perfected, but it's still workable.

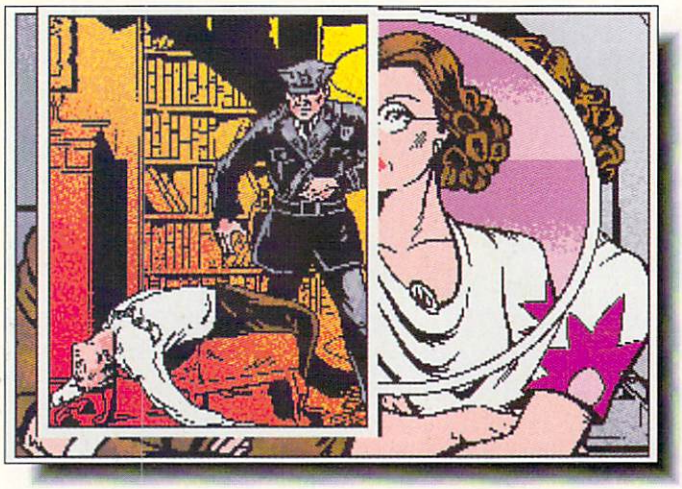
This version is originally from about 1980 and is functionally identical to the one done for DEC workstations and other Unix and IBM mainframes. The Amiga conversion was done by Loren J. Rittle (a big 'Thank You' and some applause here, please). At the time, it was considered state of the art. (Graphics? Who would ever want graphics in a game?) Dungeon is available on PLink [file #27,212], among other places. If a game could be designated an Historic Landmark, *Dungeon* would be.

The other game well worth the download time (and it's a 504832-byte file, so the download is a long one) is a demo version of *GODS*, which is one of the top games in Europe. Done by the immensely talented Bitmap Brothers (*Xenon*, *Xenon 2*, &



Gods are the coolest creatures in any dungeon anywhere.

CyberPlay



Comic books come to life when CDTV takes on *The Case of the Cautious Condor*, a new wave of interactive multimedia entertainment.

Cadaver, among others), this one is a platforms and ladders game with a Barbarian-style hero. The Bitmap Brothers do some of the finest Amiga arcade graphics and *GODS* is no exception. I find myself constantly paying more attention to the backgrounds than what I'm supposed to be looking at. That's probably why I get killed off so quickly and so often. *GODS* will eventually be released in the US, but in the meantime, this demo version will give you a good taste of it. The demo is available on BIX and it's called gods.lzh.

CDTV: The Case of the Cautious Condor

★★★+

Tiger Media, 5801 E. Slauson, Suite 200 Los Angeles, CA 90040, 213-862-5591

So far, Tiger Media seem to be the only company which has any idea of what entertainment should be on CDTV. *The Case of the Cautious Condor* blends comic book art with digitized conversations to create what could be called a radio drama with pictures. The result is a joy not only to play, but to hear, too. It's particularly fun for fans of film-noir and the Art Deco era, like Mark and me.

The plot has to do with the murder of a 'megalomaniacal millionaire' on the 1937 maiden flight of his luxurious airliner, the Condor. (Sounds a little like Howard Hughes and the Spruce Goose, huh?) Your job is to play investigator and find out whodunnit, and you have to do it before the plane lands. The time limit also makes for good repeat playability; the murderer is different each time. And because the game is very large, it will take you a long while to exhaust its possibilities.

The graphics are done in comic book manner, and well done for for that style of art, popping up differently shaped panels and overlaying them creatively. The one thing I like most about this game is the digitized voices. Hearing actual voices (and the actors playing the various characters are professional and very believable) adds greatly to the experience. Instead of just reading words, the player can hear intonation and emphasis, giving an added dimension to the detective work. The interface is reasonably smooth, though the controls are on the sluggish side. I'm still not sure how much of that is because of CDTV and the infrared controller, but that will likely improve as time goes on.

As in any new medium, there are a few rough edges, but for one of the first interactive CDTV games, *The Case of the Cautious Condor* is a fine effort.

HIGHLIGHTS FROM SUMMER CES

The principals from the late, and much lamented, Cinemaware have surfaced as Acme Interactive. They're working as a development house, though they're planning to finish those Cinemaware titles that were in the works at the time of the debacle, including *TV Sports Football 2*.

Konami has signed a two-year contract with British entertainment publisher Gremlin. Two new Amiga games have been announced: *Spacewrecked - 14 Billion Light Years from Earth* (strategy/adventure/role-playing) and *Team Suzuki* (motorcycle racing). Look for both in the third quarter of this year.

Kellyn Beck, of *Defender of the Crown* and *Centurion* fame, has formed a new company called Cineplay Interactive. He showed me a new graphic adventure he's working on called *Detectron*. The IBM version I saw looks wonderful; while it may not be a full evolutionary step up the gaming ladder, it certainly makes a good start. The game is set on a future Earth that's run by robots who have made a sort of game preserve out of ruins of Washington, DC and where they keep last ten remaining humans. Beck and his crew have kept the story in the forefront and made the interface as transparent as possible, leaving the player free to interact with the story without getting bogged down in the mechanics of getting through the game. It also has the unusual feature that the player has a role in determining how the story turns out; different decisions at certain points in the story will cause different outcomes. From what I saw of *Detectron*, it will set a new standard for the genre. The Amiga version should be out by Christmas.

Maxis is continuing their series of extraordinary simulations with *SimAnt*. Yep, it's just what it sounds like. The game is set in the front yard of a suburban home, where you're in charge of propagating and managing an ant colony. The idea is to fight off other ant colonies and eventually invade the house. The game is from the ant's point of view, which gives an interesting twist to perception. The ending is just too good not to pass along: you win when the owner of the house comes out and plants a For Sale sign in the lawn. I saw the Mac version, but there is an Amiga version in the works. As a side note, Maxis really is doing an Amiga conversion of their hugely popular *SimEarth*. It should be in the stores by Christmas.

★

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IBM screens pictured.

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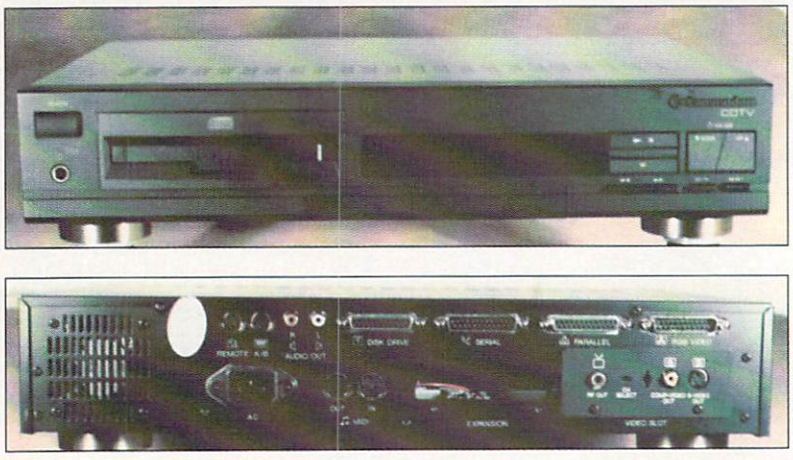
The program is published with the cooperation of the Tolkien Estate and their publishers, George Allen & Unwin (publishers) Ltd. The plot of The Lord of the Rings, the characters of the hobbits, and the other characters from The Lord of the Rings are © George Allen & Unwin Publishers Ltd. 1966 1974 1979 1981. © 1990 Interplay Productions. All rights reserved. MS-DOS is a trademark of Microsoft Corporation.

Morton A. Kevelson on Hardware



Top: CDTV's front panel controls.
Bottom: Most of the back panel connectors are computer-related.

Mort's coverage of A500 expansion boxes has been postponed in favor of a hands-on look at CDTV.

With CDTV, Commodore has done a good job of combining an Amiga computer with a CD-ROM drive in an innocuous, easy to set up 'Trojan Horse' that unsuspecting computerphobes will bring into their homes. Other than the Commodore name, there is nothing on the CDTV front panel to distinguish it from the dozens of compact disc players which presently fill dealers' shelves - except, perhaps, the $999 price tag. CDTV's 17-inch width and 13-inch depth perfectly matches the other audio components in my system.

Unlike most compact disc players, CDTV's disc-loading mechanism is not based on a slide-out drawer. Instead, the CDs must be placed in a separate caddy, which resembles an oversized floppy disk; this is then shoved into a slot on the front panel.

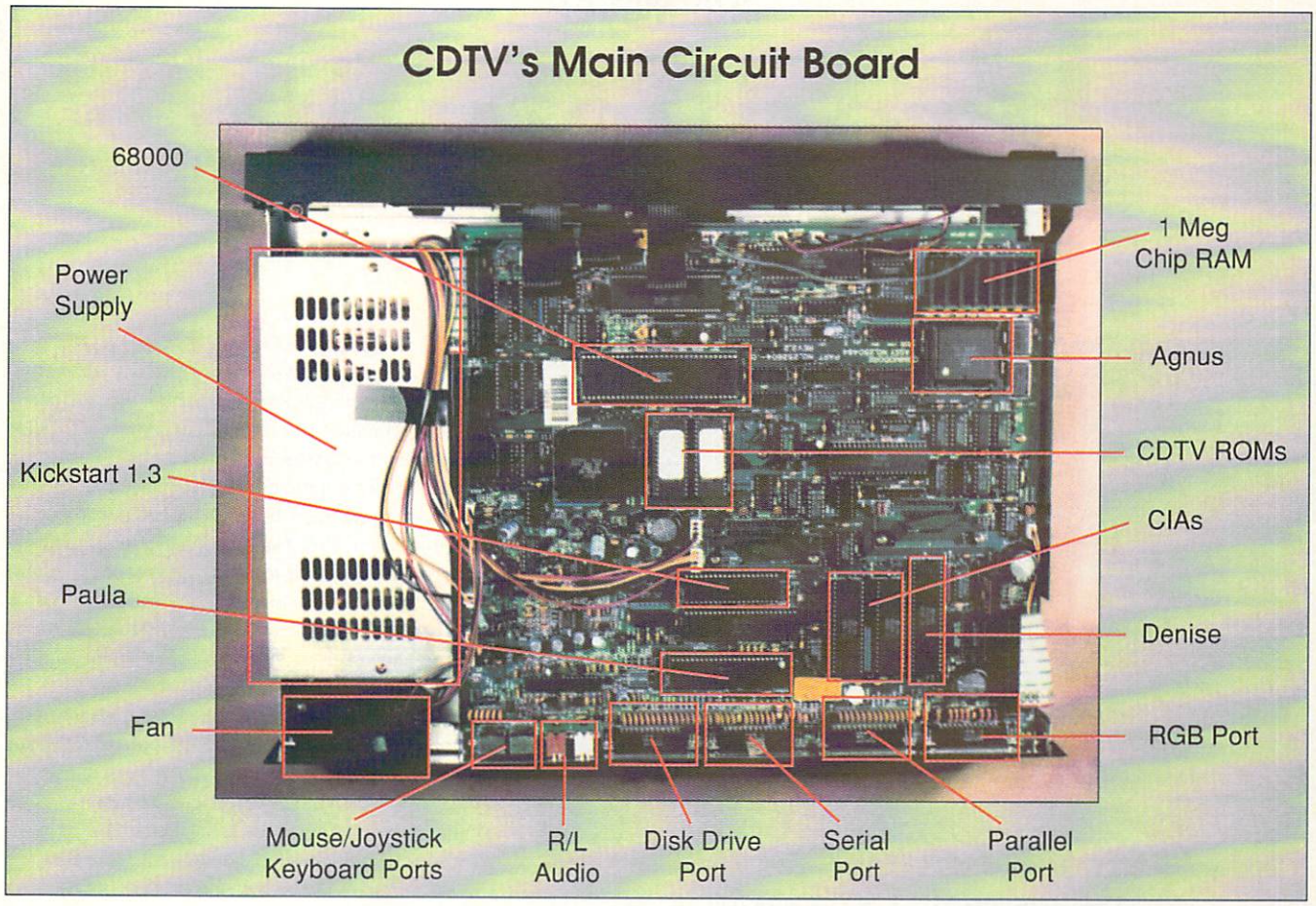
THE HARDWARE

CDTV's front panel is simpler than that of the typical CD player - all of CDTV's advanced audio operating functions are accessed via the video display. The power pushbutton is on the left, directly above a standard headphone jack. The CD caddy slot to the right of the power switch is followed by a digital display which shows the time of day and the current track number. Below this display is a panel which hides the controversial and as-yet-unused memory card slot. The right end of the front panel contains eight buttons which control the start, stop, pause, forward, and reverse track skip functions for audio CDs. Two of these buttons control the volume of the audio output at the headphone jack and RF output connector to the TV. (Audio output via the stereo line output jacks is controlled by your amplifier volume settings.) A single button switches the RF signal between CDTV's output and the antenna/cable signal. The reset button performs the same function as the Control-Amiga-Amiga key combination on any Amiga computer.

The back panel, which sports no less than 14 connectors, is far more imposing than the front panel. Of course, only the power connector and the RF connector are actually needed to place the CDTV into service - the rest are computer-related. The connectors in the top row include the standard Amiga RGB, parallel, serial, and disk drive ports. These are followed by the left and right RCA-type audio output jacks. The next two connectors are subminiature DIN types for a wired remote keyboard and a mouse/joystick. There is no second joystick port. An optional infrared "brick" will be available for a wireless keyboard and mouse. It should also be possible to build an inexpensive adapter which would allow for the connection of an Amiga 1000 or Amiga 2000 keyboard to the back panel's keyboard connector. *[Commodore sells such an adapter to CDTV developers for $10. -Ed.]* The CDTV's power cord connector is located right below the keyboard jack.

Below the RGB and parallel port connectors is the RF output panel. This is actually a video expansion card which can be easily extracted by removing a pair of screws. The supplied video card provides composite video output, RF audio/video output to channel 3 or 4, and S-Video output. I found that the composite video output provided excellent color images for all CDTV applications with the exception of 80-column text. The RF audio/video output provides good images within the limitations of broadcast TV. Note that the audio signal from the RF port is a monophonic combination of the left and right channels. To get stereo you have to use the separate audio connectors. I also tried out the S-Video and RGB outputs on an Amiga 1084 RGB monitor. The RGB output was identical to what I normally see on my Amiga 2000. For some images, I thought the S-Video output gave even better results than the RGB connection, with stronger colors and higher contrast.

Right next to the video slot is an expansion port



which is covered by a blank plate held in place by a pair of screws. A 30-pin printed circuit edge card connector is set back about four inches from the back panel. Expansion cards about 3x4" fit into this slot. These dimensions are somewhat restrictive as compared to the 86-pin and 100-pin slots which are provided on other Amiga computers. One of the devices planned for this port is a SCSI host adapter for an external hard drive.

Immediately to the left of the expansion port are MIDI IN/OUT connectors for use with MIDI instruments in conjunction with CDTV's ability to play CD+MIDI encoded discs, or for direct program control of MIDI devices.

REMOTE CONTROL

CDTV's infrared remote is about 8x2" or roughly the same size as the other remote controls in my collection. With only 28 pushbuttons, the CDTV remote is actually one of the less complicated units. Like the Nintendo controller it resembles, CDTV's remote is designed for two-handed operation. The left hand manipulates a cluster of four curser or arrow keys. The right hand operates a pair of pushbuttons labeled A and B, which correspond to the left and right Amiga mousebuttons. In fact, the cursor keys and the A and B buttons are enough to handle all of the CDTV's application software that I have used. These buttons will also emulate all of the Amiga's mouse functions.

The central part of the remote control contains a numeric keypad with escape and enter buttons, and four basic function keys for operating CDTV's compact disc player mode. There is also a genlock button, a CDTV/TV select button, and a JOY/MOUSE button. The latter places the remote control into joystick or mouse mode. The last press of the JOY/MOUSE button is remembered by the remote and not by CDTV. Keep in mind that if the JOY/MOUSE button is accidentally pressed, the CDTV may fail to respond to the remote. The power button on the remote will only work if the manual power button is pressed on the CDTV. If you turn off power from the remote, the remote must be used to turn power back on. A pair of volume buttons for the headphone jack are also provided on the remote control.

INSIDE CDTV

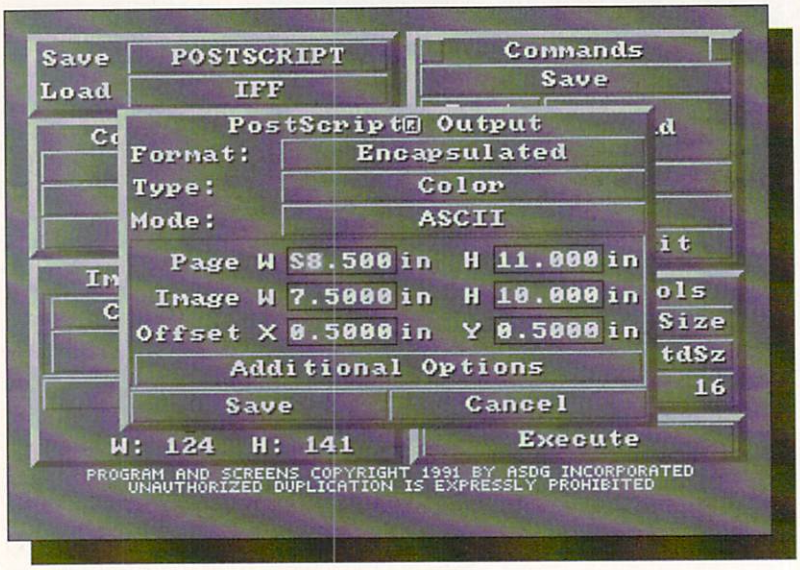
Under CDTV's black sheet metal cover lurks an Amiga, a CD-ROM drive, and a switching power supply. The entire package is force ventilated by a small fan located behind the power supply, whose susurration was barely audible in a quiet living room. Although the board layout was unfamiliar, I was able to locate and identify a number of familiar faces including the 68000 microprocessor, a Kickstart 1.3 ROM, the one megabyte Fatter Agnus chip, the Paula and Denise chips, and of course, one megabyte of system RAM. The clearance between the main circuit board and the top cover is minimal, so do not expect to see any internally mounted expansion devices. Due to the complexity of the interconnecting cables and the integrated construction of the front and back panels with the main chassis, I did not risk disassembling the CDTV down to the CD-ROM drive. Overall, the internal construction of CDTV resembled that of other high quality made-in-Japan consumer electronic products that I have seen.

PLAYING CDS

The main difference between CDTV and a conventional compact disc player is that you have to turn on the television in order to access its advanced functions. You

Continued on page 64 . . .

Jim Meyer on Productivity



ADPro's PostScript output control panel.

Join Jim as he examines the desktop publishing potential in ASDG's *Art Department Professional*.

Production work on the Amiga is often a matter of taking what you have and converting it to what you need. There was a time when the only kinds of graphics we contended with were IFF and HAM, and the only manipulations needed were conversion from one format to another, resizing, and perhaps a few modifications to the color. *Pixmate* was (and is) a remarkable tool for those purposes. But what about the advanced HAM formats? What about TIFF and Targa and Sculpt formats? What about PostScript? *The Art Department*, from ASDG, Inc., made its reputation on format conversion. *The Art Department Professional* (*ADPro*) goes even further. Brad Schenck, in *.info* #41, took a look at *ADPro* from a graphics perspective. This month, I'll examine the DTP applications of *ADPro*.

EPS AND IFF

All of the Big Three desktop publishing packages (*Professional Page*, *PageStream*, and *Saxon Publisher*) will import IFF and Encapsulated PostScript (EPS) files. In fact, *PageStream* will import just about *any* graphic format - even TIFF and PICT. So why bother with an external conversion program? Control. *ADPro* gives you control over the conversion process, letting you manipulate the image until it fits your needs.

WHAT FLAVOR OF POSTSCRIPT?

ADPro gives you two primary choices when converting to PostScript: Regular or EPS. The difference between the two is small, but significant. Bear in mind that PostScript is a language, and PostScript files are sets of commands. A graphic converted to PostScript is intended as a stand-alone document, a page unto itself. Encapsulated PostScript graphics, however, are designed to be included (encapsulated) within PostScript documents. They can be placed anywhere on a page, can be sized and rotated. An EPS file, however, exists as a single element, unlike PostScript files, which can be collections of PostScript elements. This difference is meaningless unless you intend to import the file into a PostScript graphics program. In general, you'll want to use PostScript format when you intend to output it as a single graphic. If you want to incorporate a PostScript graphic within a document, use EPS.

ADPro makes the conversion process utterly painless. Once you've booted *ADPro*, you'll be greeted by an array of 3D buttons. Your first choice will be the format of the graphic you're loading. As of this writing, *ADPro* loads IFF, Impulse, MacPaint, PCX, Screen, Sculpt, Backdrop, DPIIE, DV21, GIF, Framegrabber, and HAM-E. (The *Professional Conversion Pack*, available separately, adds TIFF, Rendition, and TARGA formats.) That's a pretty heady list, and ASDG keeps adding to it. You roll through the list of available load formats by clicking on the "Load" gadget. Once you've found the right format, a click on the Command panel's Load gadget will load the loader and summon a requester. A few more keystrokes and clicks, and your graphic is loaded. Note that *ADPro* will convert anything it loads to 24-bit format.

As Brad noted in his review of *ADPro*, there are any number of manipulations which can be performed on a loaded graphic; I won't repeat them here. Instead, we'll proceed directly to the conversion process, starting with PostScript. *ADPro* implements the conversion process as a part of its Save routine. Click on the Save gadget until it says PostScript. This loads the PostScript saver, and readies you for the next phase: Options.

IT SLICES, IT DICES, IT CROPS, AND IT BLEEDS

There are three separate "saver control" panels. These panels give you enormous control over the

generation of the PostScript file. The main panel allows you to specify encapsulated or non-encapsulated format, type, greyscale or color, and ASCII or binary output. ASCII output can be edited, if you understand PostScript, and is accepted by all PostScript devices. Binary, which is more compact, is understood only by PostScript printers connected to an Appletalk (or similar) network. In addition, there are settings for height and width, both for the page and for the image. The final controls on the main panel allow you to specify X and Y offsets for the image box, relative to the upper left-hand corner of the logical page. (The logical page is the PostScript definition for the space within which the image box is placed; this is not necessarily the same as the physical page.)

The second panel allows you to specify the densities for the components of color separation files (Cyan, Magenta, and Yellow) or for the Red, Green, and Blue components of color PostScript files, or the black density for the above, as well as greyscale files. Those same controls are duplicated for the angle values, again defined for CMY or RGB, and black. (Roughly defined, the angle describes the way the "grid" of dots are oriented with respect to the coordinate system used by the output device. An angle of 90 degrees would result in a vertical grid for most printers.) You may also choose to ignore the density and angle settings. This panel also allows you to toggle between portrait and landscape mode, to select crop and/or registration marks, and retain or ignore the aspect ratio of your image.

The third panel allows you to place your logical page with respect to the physical page. This placement is defined as an X-Y offset from the lower left-hand corner of the physical page. You may also rotate the logical page, through the Rotation setting, about its lower left-hand corner. There are two controls for Under Color Removal (UCR) and Grey Component Replacement (GCR) values, expressed as a percentage. A short digression: Equal parts of Cyan, Magenta, and Yellow, mixed together, should produce black. They don't. What you get is a brown slurry. Printers get around this by creating a fourth layer - black - in addition to the C, M, and Y layers. (Black is the "K" layer.) To compensate for the K layer, a certain percentage of color should be removed from the color layers. This is the UCR value. The GCR value determines what percentage of the color removed by the UCR operator is added back as black. Increasing this value results in darker blacks, but less intense colors. (You may also click on the Printer Defaults gadget, and use the values built into your printer.) Additional gadgets allow you to define your image as a positive or a true negative, regardless of the printer, and as a normal or mirror image.

COLOR SEPARATIONS

ADPro offers three varieties of color separation - RGB, CMY, and CMYK. The best printed results

ADPro's Color Separation controls.

are obtained with the four-color CMYK separations. The color separation panel allows you to specify either 24-bit or 12-bit files. While the 24-bit files will be considerably larger than their 12-bit counterparts, the advantage is that the greater range of shades will result in smoother, more realistic color transitions. You may specify whether the separation files should have a color or greyscale color map. As with the PostScript saver, the Separation panel allows you to specify the amount of under color removal and grey component replacement. Finally, the Ink Compensation feature allows you to adjust the magenta and yellow content of your image. This feature is intended to compensate for the inaccuracy of the color of the printer's ink.

THE VERDICT

ADPro is an outstanding program. It not only does what it does exceptionally well, it does more with each passing month. The folks at ASDG are continually adding loaders and savers, to ensure that *ADPro* can handle any new format which appears on the market. *ADPro* follows the rules, too. It installs with ease on a hard drive, operates equally well under AmigaDOS 1.3 or 2.0, and features a powerful ARexx interface. The few flaws I found in *ADPro* amounted more to quibbles than complaints: I had a few problems with the manual layout, and I'd like to see a meatier index. *ADPro* could be friendlier to machines with less than two megabytes of memory. As ASDG notes, *ADPro* runs best in a machine with four or more megabytes of memory. It will run in as little as one megabyte, but your options will be limited. As I noted, though, these complaints are minor. *ADPro* is powerful, polished, and a pleasure to use. It's a must for a professional setup, and a welcome addition to any DTP stable.

★

Art Department Professional

★★★★+

$240.00

ASDG

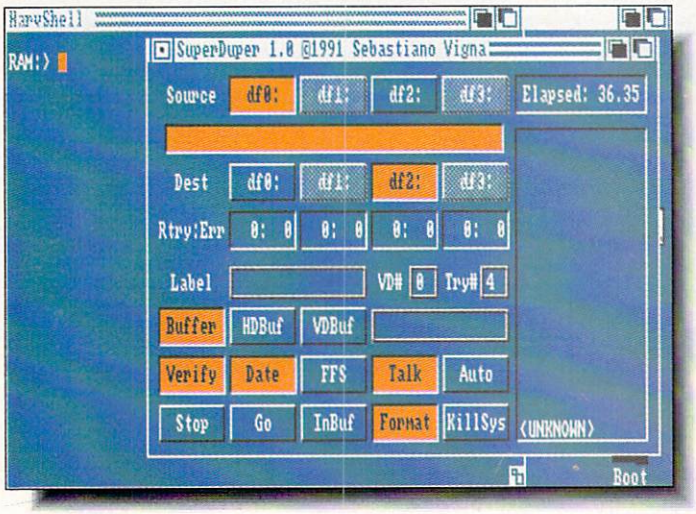
925 Stewart St.

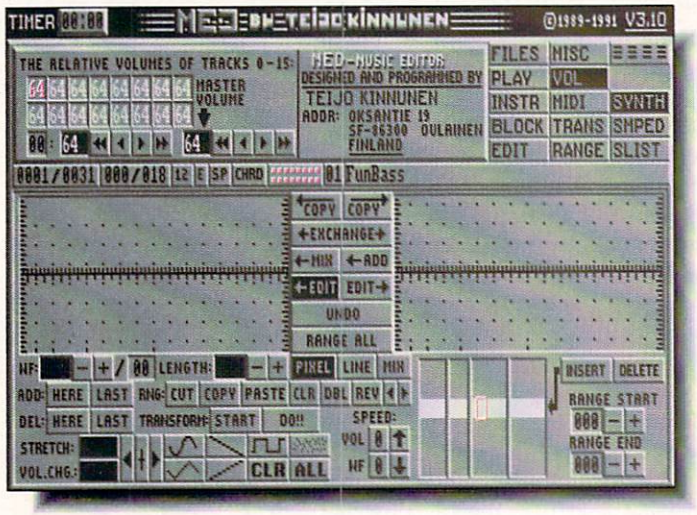
Madison, WI

53713

608-273-6585

PUBLIC DOMAIN





AT PRESSTIME:

People/Link abruptly left the on-line airwaves the end of June, but the Amiga Zone has moved from PLink to Portal, another national network. You can sign up by voice: 1-408-973-9111 (9am-5pm Pacific Time); by modem: 1-408-725-0561 (24 hours); or just dial your local Telenet/SprintNet node and type **C PORTAL** at Telenet's "@" prompt. Portal is also PCPursuit-able. When you sign up to Portal, be sure to tell them "Harv sent me."

BBBBS32.LZH [27,791/AZ]

Famed for his company Gramma Software's *NAG Plus*, *FreD*, and other titles, Richard Lee Stockton has released as shareware a complete Amiga Bulletin Board System (BBS) written in ARexx that runs inside PP&S' *Baud Bandit* terminal program. With necessary features like EMail, libraries, bulletins, and message bases, *BBBBS* also sports binary EMail, "Doors", games, fortunes, cut-and-paste message editing, and spellchecking, to name just a few powerful goodies. Make a modem call to 206-744-1254 (PCPursuit: WASEA) and you can check out Richard's *BBBBS* from a user's point of view. BBS sysops and 'wannabees' will wanna take a look at this innovative software.

SUPERDUPER.LZH [27,854/AZ]

Here's a floppy disk copier and formatter by Sebastiano Vigna, the same developer who brought you the multi-talented *Mostra* IFF displayer. *SuperDuper* (shown) formats a disk (without verify) in 70 seconds. That's *fast*! It can RAM-buffer an entire disk to simultaneously make multiple copies to multiple disk drives - great for user groups! An easy-to-use clickable interface, sound and even voice prompts, auto disk-sensing, timers, and other safety features make this another utility you won't want to be without.

MED310.LZH [28,010/AZ]

MED (shown) stands for "Music Editor", and Teijo Kinnunen's incredible program is not only used by many European game and demo programmers to create their soundtracks, but that's just a hint at its power. *MED* is also a stand-alone composing tool that can drive MIDI instruments or read from Amiga samplers like *PerfectSound*, and with it you can load, edit, play and save *NoiseTracker* music modules.*[See Peggy Herrington's Sound & Music column in* .info *#41 for more on* MED. *-Ed.]*

BUGBOOK1 [3,449-51/AZPRO]

Amiga World's Lou Wallace strikes again with an *AmigaVision* application that you may have seen him demonstrate at an AmiExpo seminar or on the nationally-syndicated Computer Chronicles show. The interactive *BugBook* (shown) requires you own *AmigaVision 1.53G* or higher, an *AV*-supported LaserDisc player with an RS-232 interface, and original LaserDisc media. The required "Encyclopaedia of Animals" disc is published and sold by Pioneer.

- Harv Laser

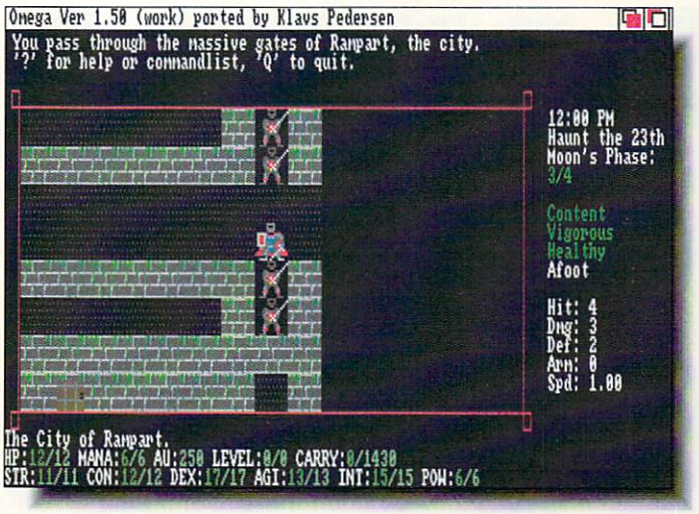
PUBLIC DOMAIN

GEnie

GEnie is General Electric's commercial online information service. GEnie's *Starship Amiga* software library has over 11,000 files available for downloading. For information on signing up for GEnie, call 800-638-9636.

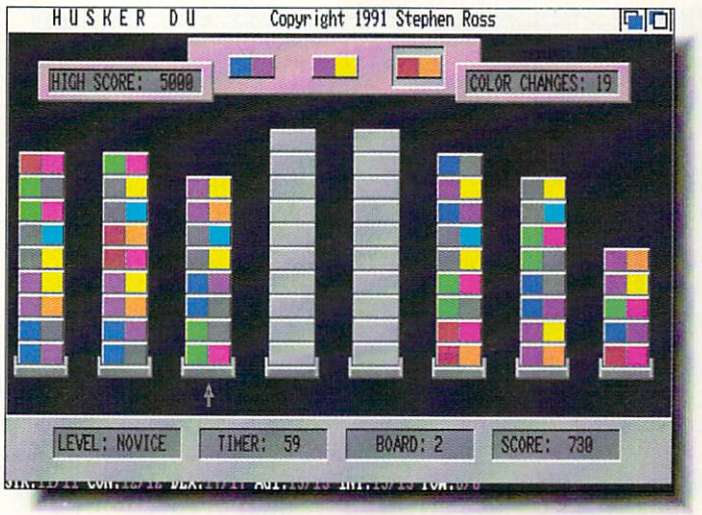
OMEGA1.50.LZH [11247]

Hack, Larn, and *Ultima* adventure lovers should take the time to download version 1.5 of *Omega* (shown), which now features *Ultima* style graphics. Play is very smooth. This file unarcs onto a whole disk, so there are lots of places to explore, lots of treasure to collect, and lots of monsters to usher into the nether realms. There are lots of places to die, too, so save your place often. *Omega* even has an option allowing you to create a character using your own "real" statistics (assuming you don't fib during the little quiz.) The current freeware Amiga version is by Klaves Pedersen.



HUSKERDU.LZH [11351]

Tetris addicts might want to dry out a little with *Husker Du* (shown) a *Tetris*-recovery therapy created by Stephen Ross. Color and pattern, rather than shape, is the key as you try to make eight piles with ten unique bricks each. There are five screens and three levels of difficulty. Top ten scores are registered.



LHSFXV11.LZH [11347]

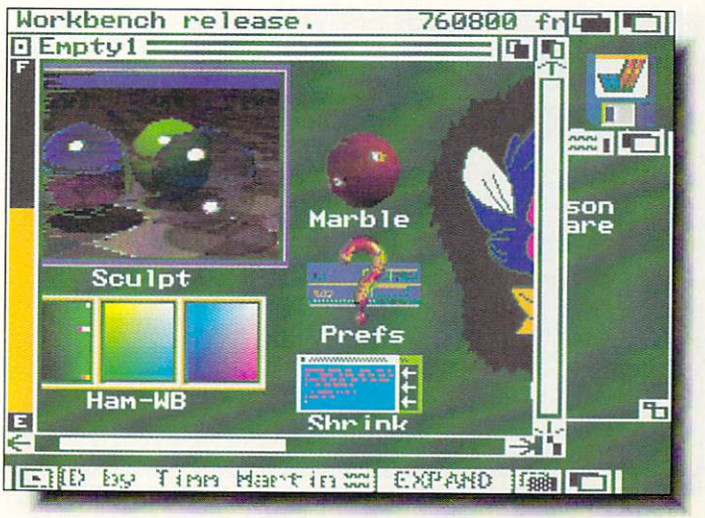
What could be better than an archive maker utility that is faster and more efficient that ZOO or LHARC? How about one that creates self-dissolving archives? *LHSFX* is such a shareware ($10) archive utility, written by Mike Kennedy (again!).

LHCON.LZH [11241]

LHCon by Steve Robbins and Bob Huff converts old pesky ARC and ZOO archives into the more popular and efficient .LZH format. It even converts whole directories in a single command. A real freeware boon to BBS operators and club librarians. You'll need ARC and ZOO in your C directory for *LHCon* to work.

HAMBENCH.ARC [11407]

Ever dream about running Workbench 1.3 with more than two bitplanes so you can have multiple color icons? *HamBench* (shown) is a working hack/utility by David Pochron with some sample HAM and 16-color icons. Not really useful - yet! - but interesting.

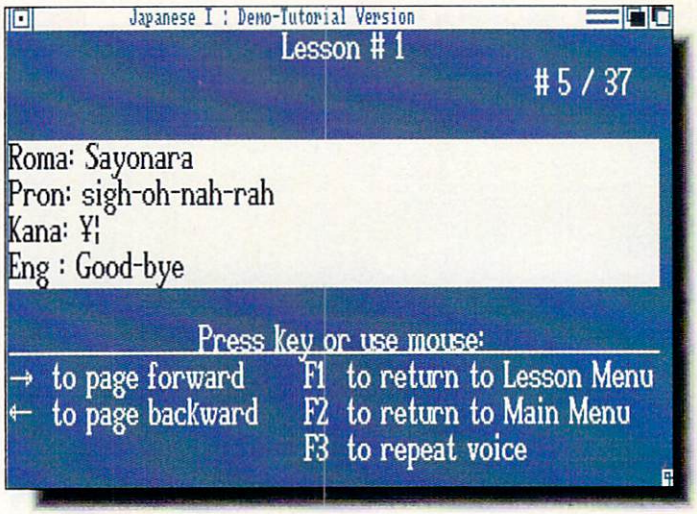


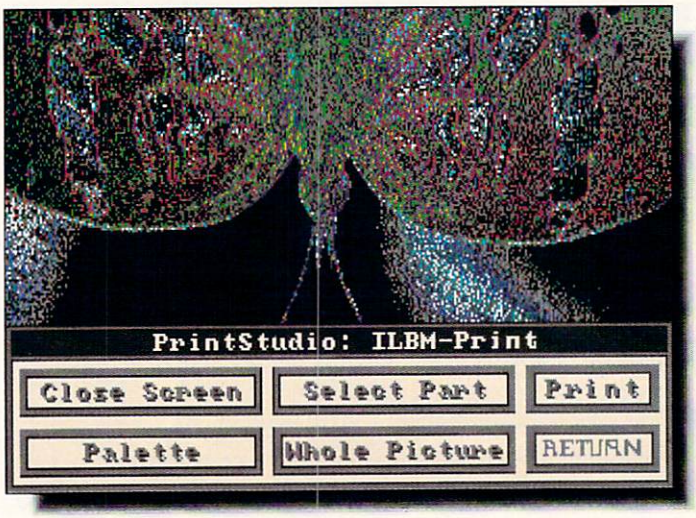
PRTFNT.LZH [11354]

PrintFonts v1.11 by David Schreiber makes its way through your Fonts directories and dumps hi-res samples to your printer. Just the thing for keeping track of what fonts you have, their point sizes and what they look like.

- Don Romero

PUBLIC DOMAIN





DISK COLLECTIONS

SOFTWARE EXCITEMENT!

Among PD distributors, Software Excitement! is big time. They're among the few who have people writing and adapting programs for them. Resident Amigaphile Terry Fike, who has written a number of packages himself, provides additional documentation for many disks.

SE 231: A SEASON IN RAM

Looking for something different? Want to impress (or fool) your English teacher? *A Season In RAM* is a "Rimbaud-inspired poetry generator." Watch it create poem after poem, some of which are actually pretty good.

SE 95: JAPANESE TUTOR

Speaking of language, ever heard your Amiga speak Japanese? Order this disk and you will! It's a demo version of a beginning Japanese tutor that sells for about $40.00. You see the Kanji characters, translation, and a phonetic representation as you hear the word pronounced.

SE 162: VIDEO POKER

If you've ever seen the video poker machines in casinos, you know how this works. Help is available if you're not sure what cards to hold and discard. A click of the mouse will also get you a chart of payoffs for possible hands. *Five Card Stud* (shown) and *Hearts* are here too, so you have a gambling club on disk. Cheaper than the real thing, unless you're very, very lucky.

SE 202: HACK ATTACK

Here they are, folks. In one 3 1/2 inch package you get some of the greatest Amiga screen hacks ever devised, including my favorite, *Melt* which appears to do just that to your Workbench screen. You'll like the others, including *Robotroff*, by the justly revered Leo Schwab, plus *Bug*, *Rainbench* and lots more.

SE 330: PRINT STUDIO

If you do a lot of printing, you'll want this super utility program, by Andreas Krebs. *Print Studio* (shown) facilitates the printing of both graphics and text with any Preferences supported printer, including color. You can print all or part of a picture, change its palette, etc. This is a very well done package. Highly recommended! Also on the disk is *Label Maker 3.5*, an excellent, feature-laden disk labelling program by the same author.

HOW TO ORDER

SE's catalog is free. 1-4 disks $7/ea; 5-14 6$/ea; 15+ $5/ea. Shipping/handling $3 per order. Standard shipping to US included. Payment: Visa, Mastercard, checks, money orders, and COD. Software Excitement!, PO Box 5069, 6475 Crater Lake Highway, Central Point, OR 97502, 1-800-444-5457 (Orders), 1-503-826-8090 (Fax), 1-503-826-7679 (Customer service/support).

- Jeff Lowenthal

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GAMES

☐ **#139-WARGAMES:** Two excellent games that will keep you occupied for hours on end. **SEALANCE** - A great submarine simulator up to par with "Silent Service" and "Attack 668". **AIR ACE 2** - Patrol the skies and keep your trigger finger ready.

☐ **#404-GAMEHINTS2:** Hints, cheats, and maps for "Chaos Strikes Back". Includes Super Characters plus many more tips and tricks for all your other favorites.

☐ **#153-GAMEPAC:** **METAMORPH** - IA well writen dungeon game that changes every time you play. **AMIGA TANXI** - Shoot it out with a friend or an enemy with this great tank simulator game. Excellent sound and graphics. **SPACEWAR** - A Star-Trek arcade type game with remote modem feature for two players.

☐ **#154-FLIGHTSIM:** This disk contains DC-10 instrument flight simulator. Also on this disk **PETER'S QUEST** - A Rainbow Island clone.

☐ **#191-ST:TNG:** **Star-Trek The Next Generation.** Another great addition to the Star-Trek game library. Digitized sound and other effects.

☐ **#022-BOARDGAMES:** This disk is full of classic board games for multiple or single players. **MONOPOLY, REVERSI, OTHELLOII, CLUE, BACKGAMMONII,** and CHESS.

☐ **#140-ARCADE4:** **PACMAN 87** - A classic. **PIPELINE** - Keep the flow of oil going. Additive. **CYCLES** - A Tron like game.

☐ **#183-DEMO'S:** Two great fully playable demo's - **LEMMINGS** and the **KILLING GAME SHOW**.

☐ **#184 - TRAIN:** A great computerized **ELECTRIC TRAIN** set. **METRO** - Plan and control the transit system by building rail lines. **SLOTCARS** - Race along avoiding hazards and making death defying jumps.

GRAPHICS & ANIMATION

☐ **#066-COVERGIRLS:** 18 beautiful faces of models from around the world. Disk 1 of the series.

☐ **#063-ANIMALS:** 25 pictures of all sorts of animals. Point and click or use the slideshow projector. Also can be used in multimedia presentations or other projects.

☐ **#068-MOVIESTARS:** All your favorite TV and movie stars from today's shows. Point and click or slideshow.

☐ **#071-RAYTRACE2:** More stunning Ray Trace pictures. Great for showing off your Amiga or using in a project.

☐ **#075-SPACE/ROBOTS:** This disk is packed with great shots from space and a collection of assorted robots.

☐ **#80-CARS:** Porche, Lamborghini, Ferrari, and fourteen other exotic sports cars are all here in stunning high-res pictures.

☐ **#083-SCENIC1:** Beautiful art and pictures of the outdoors. Waterfalls, mountain ranges, sunsets, much more. Disk 1 of the series.

☐ **#89-SCIFI:** Star Wars and Star Trek fans this disk is packed with your favorites. Point and click.

☐ **#156-POP ART:** Create "Andy Warhol" type prints with this amazing graphic utility. Also includes **ROT** - A good ray-trace program.

☐ **#46-ANIMATIONS:** This disk contains some digitized clips from a few Marilyn Monroe movies and a spectacular Sci-Fi animation.

☐ **#047-HUSSEIN:** Watch Sadddam get his in these humorous animations by Ray Lambert. Also includes a Hi Res picture of the defeated dictator for you to edit as you wish in your favorite paint program.

☐ **#059-ANIMATIONS:** **TOOMUCH3D** - Don't miss this excellent animation of a spaceship that flies straight out of the monitor and plays havoc on the room, only to return from where it came. Also on this disk **BILLIARDS, 3SPACE**, and a couple of good cycle pics.

☐ **#120-AEROTOONS:** A wacky collection of high altitude shenanigans from Eric Shwartz. **STEALTHY MANEUVER, SKYDIVE, AGGRESSOR, SOVIET SOFT LANDING.**

☐ **#300-ANIMATIONS:** Go along with "Amy the squirrel" in AT THE MOVIES by Eric Shwartz. This is a long running movie about a persistent date who won't take no for an answer. Rated PG-13.

UTILITIES

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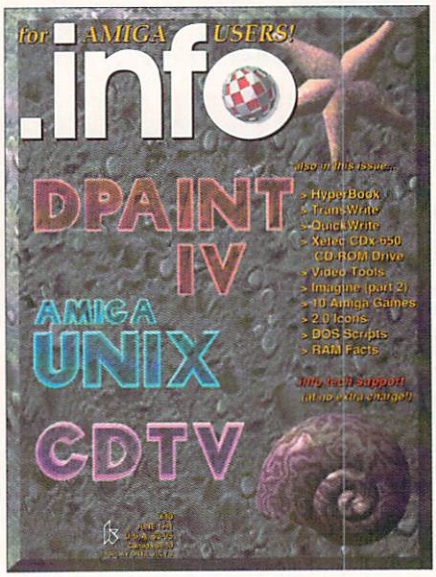

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PRODUCT OVERVIEW by Mathew Leeds

MONSTER Floppy Drives

Mathew Leeds test drives a new 25 meg floppy.

The American culture has a fascination with big things. Witness the attention paid to trucks with tires taller than the driver, BigFoot, supermarket magazine stories about tomatoes the size of watermelons, and the discussions in publications like this about hard drives and memory. Most of us want more - sometimes just to have it, but often for good reason. I fall somewhere in the middle.

So you can understand why a few years ago I began to follow developments in the computer press discussing 20MB floppy drives. What a great idea! Think of how easy it would be to back up your hard drive. Heck, you might not even *need* a hard drive. Animations many minutes long could be stored on a single floppy. Recently I had a chance to play with one of these mythical monster floppy drives. The telling of that tale, with suitable digressions for background and color, may serve as a cautionary tale.

ONE-TWO-FOUR

The Amiga floppy drive is a 1MB device. Once formatting information is written to the disk, you are left with 880K of usable space. A couple of companies have been working on floppy drives with more room. Applied Engineering developed an Amiga version of the industry standard 2MB high density (HD) floppy drive, and Commodore has had in their engineering labs a similar device for well over a year. Toshiba has developed a 4MB floppy drive and disk which has come to market this year, and will be showing up in MS/DOS and Mac machines.

The 4MB disks use a new recording media that allows for a denser recording of data than traditional disks. Although the number of tracks and rotational speed remains the same as for 1MB disks (135 tracks per inch and 300 RPM), rather than using the current longitudinal recording method - where data is written parallel to the plane of the recording medium - data is written perpendicularly to the plane of the recording medium. These new extra-high density (ED) drives can also read 1MB and 2MB disks. So far no one has announced an Amiga version of this drive type.

In general, there are two benefits to the higher density drives. They store more data and they transfer it faster. Since the drive rotates at the same speed as conventional drives, the disk media is passing under the read/write head at the same speed. Since the data is written more densely, it must be read and written faster.

While Toshiba was slowly working to get an industry standard accepted for their 4MB floppy drive, a couple of companies took a look at the new recording media developed for the 4MB floppy and decided that it could hold quite a bit more data if only some way of writing narrow tracks could be developed. Traditional floppy drives use positional feedback information to position the read/write head correctly. Hard disk drives use a dedicated platter with servo tracks to position the head assembly. A servo head reads the servo tracks and keeps the rest of the read/write heads correctly positioned. Since there are several platters in a hard drive, using one for positioning data still leaves several for user data. With a floppy drive, using one surface for servo data would cut potential user data storage space in half.

OVER TWENTY

Several approaches have been taken to resolve this issue. One company decided to use a laser to embed grooves in the surface of the disk. These are used for servo tracking information and are read by another laser. Another company decided to use a "buried" servo approach. A series of magnetic servo tracks are written at the factory with a very high magnetic flux head. These servo tracks are unaffected by the normal read/write head. They are read continuously by the read/write head and the servo info is sorted out electronically.

This buried servo approach was developed by Brier Technologies. Their *Flextra* drives are the only very high density (VHD) floppy drives currently available for purchase, and they have been shipping for over a year. They shipped me a *Quadflextra 25*, a SCSI external drive based on their *Flextra* 3020 half-height drive. The *Quadflextra 25* is intended for the MS/DOS market and comes with an ISA form factor SCSI controller card, cable, and MS/DOS compatible drivers. It has a raw capacity of 25MB and a formatted capacity of about 21MB. The loan of the drive was an experiment to see if it would work with an Amiga, and neither Quadram,

the supplier of the *Quadflextra 25*, or Brier are currently supplying drives specifically for the Amiga market, nor do they have any expertise on connecting them to an Amiga. I was venturing into Terra Incognito.

I was assisted in my experiments by Randy Spencer, a long time friend and associate whose Amiga knowledge is second to none. He has worked in both programming on the Amiga and hardware repair, and if he couldn't get the *Flextra* working on an Amiga then it couldn't be done. I had never had occasion to work with *HDToolbox* in the past, and welcomed any assistance I could get.

INITIAL DIFFICULTIES

The first thing we discovered was that the cable supplied with the drive was wired differently than standard Amiga SCSI cables. The supplied cable locked up the SCSI bus. This caused no damage to the hardware, and once we substituted a standard SCSI cable we were able to proceed. We needed to get the drive recognized by the SCSI controller on my A3000, format the disk, and then proceed with our timing tests. *HDToolbox* happily found the drive, did a low level format, and displayed an icon on the Workbench for the as yet unformatted disk. That part was easy, if time consuming.

We ran into trouble when we tried to do an AmigaDOS format on the disk. For some reason, half the time the disk appeared to be write protected and could not be formatted, and half the time the disk formatting would appear to proceed, but once the Amiga finished we could not write to the disk. Something was wrong with the mechanical write protection recognition mechanism in the drive. We returned it and received another. It turned out that the disk drive door had become detached from its hinge and was blocking the write protect mechanism.

SPEED TEST

Once the new drive arrived, everything worked fine the first time it was hooked up. I was able to get the drive recognized by the Amiga, got a disk formatted, and was ready to put it to the test.

The test we used was *DiskSpeed*, written by Mike Sinz. It has become somewhat of a standard for testing the relative speed of a disk drive on the Amiga, and version 3.1 which I used is simple and straightforward. Figuring why I got the results I did was not.

According to the specs for the *Flextra* drive, it has a 1.25MB/sec data transfer rate from its buffer and a 35ms average access time. With those specs the results I got make little sense. The *Flextra* does not buffer a full track at a time unless the application requests a full track. This could affect the results. The engineers at Brier have been given my results and hope to eventually have an answer.

DiskSpeed 3.1

This is a test of the Brier drive.
Test Intensity: Med; Performance Stress: None
2 Files Create, 4 Files Open/Close, 11 Files Scan, 12 Files Delete, 679 Seek/Read

BUFFER SIZE	512	4K	32K	256K
Bytes Create	2995	13662	45761	60855
Bytes Write	2699	18924	51257	80406
Bytes Read	5625	8079	10691	13041

This is a test of a newly formatted AmigaDOS floppy in df0:.
Test Intensity: Med; Performance Stress: None
1 File Create, 2 Files Open/Close, 41 Files Scan, 42 Files Delete, 153 Seek/Read

BUFFER SIZE	512	4K	32K	256K
Bytes Create	8333	5457	9830	10645
Bytes Write	9852	4971	10410	10476
Bytes Read	19595	9930	18562	20087

When that happens I hope to be able to share it with you here.

IS THERE ROOM FOR A MONSTER?

There are other factors to consider in this as well. Currently the *Quadflextra 25* external drive lists for $895. Estimating a price for an Amiga version is difficult, but given that there would be no need for including a controller card, the price should be able to come down somewhat. Quadram is not likely to produce an Amiga version, but perhaps one of the Amiga hardware manufacturers would. The media costs are around $25/disk. A careful comparison to Syquest (44MB removable hard drive) technology should be made with consideration for data transfer rates, costs per MB, media size, and total storage capability.

It is clear that monster floppy drives will find their place in the market. New developments will allow downward compatibility with 1MB, 2MB, and 4MB floppy disks, allowing for a single floppy drive in a computer to serve several purposes. Additionally, reduced size and power requirements will allow their use in laptop computers. I would hope that the engineering problems are quickly resolved and that we will see monster floppies in the Amiga market by the end of the year.

Everything worked fine the first time it was hooked up.

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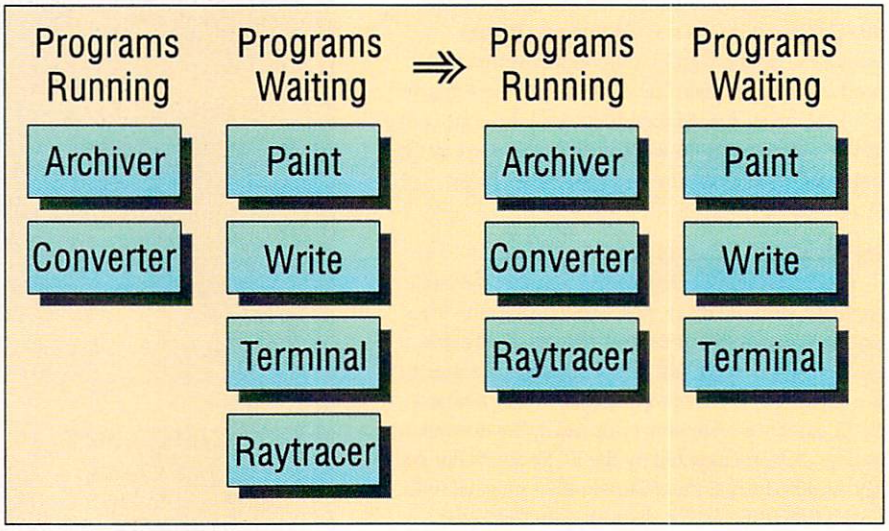
Chris Zamara shows you how to write 'programs' in AmigaDOS.



Your Amiga can run several programs at once. Programs waiting for input or output are placed in the waiting list. Programs that are performing computation are in the running list. The Amiga switches between running programs after a period called a quantum. In the diagram above, a raytracing program starts rendering.

MULTITASKING

How it works and how to control it

by Rhett Anderson

The Amiga multitasks. You know it, I know it, even people with PCs and Macs know it. Most of us use multitasking all the time, without even thinking about it. But what exactly is multitasking? And what makes it so useful?

When the Amiga first hit the streets, the value of multitasking was not generally well understood. An Atari ST advocate once told me, "Multitasking is cool, but it's not very practical. The Amiga's fine when you run one program. But when you run two programs, each program runs at half-speed. When you run three or four programs, the Amiga crawls." A perfectly reasonable-sounding statement, to be sure. But not entirely true.

Multitasking is just catching on in the Macintosh and PC worlds. With a firm grasp of a few concepts, you can take control of your Amiga's power, and be on the leading edge of computing.

The Heart of the Matter

At the heart of the Amiga is Exec, the multitasking kernel that controls interrupts, input/output, message passing, and other low-level functions. The most fundamental of the multitasking jobs that Exec performs is 'task switching'.

The Amiga only has one processor. It's a Motorola 68000 in the Amiga 500 and A2000, and a Motorola 68030 in the A3000. These chips can only run a single program at a time. Multitasking works by rapidly switching the processor to work first on one program, then on the next. This happens so quickly that it seems as if all the programs are running simultaneously, as if they each had their own dedicated processor to run on.

You may have also heard the term 'multiprocessing'. Multiprocessing computers divide the work among two or more processors. Famous multiprocessing machines include The Connection Machine and the Transputer. The Amiga is not such a machine, although it does have a built-in coprocessor to take care of graphics.

Multitasking is like reading two books at once. First, read a sentence from one book, then read a sentence from the other. If you and a friend split the work and each read one book, that would be like multiprocessing.

What It Is

Suppose you are running three programs at once on your Amiga. All three are busy doing some number-crunching. Every so often, Exec decides that it is time to switch programs. So the Amiga stops executing Program 1 and starts executing Program 2. This is known as a 'task switch', because each of the executing programs is called a task.

In this worst case, then, each of the three programs gets about a third of the processor's time. So they do indeed run about a third as fast as they should. But these aren't your typical Amiga programs. Suppose that instead of running three number-crunching programs, you run a CLI or Shell, a paint program, and a wordprocessor. In this case, all the programs are waiting for input from you. When a program is waiting for input, Exec does not switch to it. Now suppose you click in the wordprocessor and start typing. You have the Amiga's undivided attention. Your wordprocessor runs at full speed, even though the Shell and paint program are up and ready. There's a name for the state that the Shell and paint program are in; it's called the Wait (or Waiting) state. The wordprocessor is in Run (or Running) state.

Sometimes you'll run across a poorly-written program that doesn't go into Waiting mode when it should. The Amiga will still multitask with such programs, but the system will slow down. Other programs prevent multitasking from occurring at all. These programs (usually games) call a system function called Forbid. Forbid tells Exec that it should stop performing task switching. Another way that a program can keep Exec from task switching is by calling Disable, which turns off interrupt handling. Exec uses an interrupt to decide when to perform task switching. If Exec doesn't see the interrupt, no task switch can take place.

Another way a program can impair other programs is by 'resource hogging'. If a program takes complete control over a resource like the parallel or serial port, and never relinquishes control until it exits, or if it uses all available memory, other programs may not be able to run.

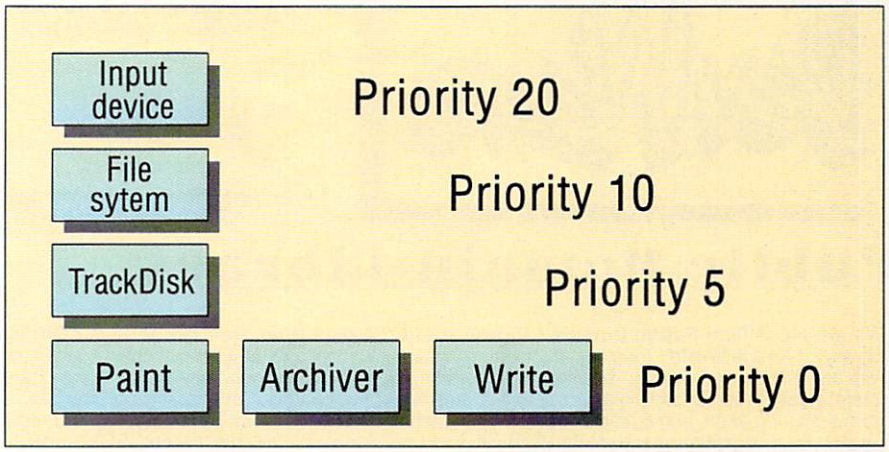
The Quantum Leap

The Amiga's form of multitasking is called 'pre-emptive multitasking'. The Macintosh's Multifinder operates differently: It uses 'cooperative multitasking'. Macintosh programs must repeatedly call a function which gives control to Multifinder. Badly behaved programs keep Multifinder from being able to task switch. That's the reason Macintosh owners are said to be waiting for "true multitasking."

So how does Exec decide when to switch from one task to another? Exec maintains a variable called Quantum, which is generally inaccessible to the user. On my Amiga 500, the Quantum is 16. This means that after 16 ticks of the interrupt, Exec will switch tasks. In version 2.0 of AmigaDOS, this value is 4 instead of 16. The smaller the Quantum number, the more often tasks are switched.

What are the implications of the Quantum? Although the Amiga performs a very quick task switch, especially compared to large operating systems like UNIX, the task switch itself still eats up some time. The more time Exec spends switching tasks, the less time the Amiga has to run user programs.

On the other hand, if the Quantum number were bigger, Exec would perform task switching less often. In theory, this means that less time is spent switching between tasks. It sounds ideal, but imagine that the Amiga switched tasks every 30 seconds - you'd lose the illusion of having several programs running at the same time. A large Quantum would make the Amiga less responsive.



Some system programs run at higher priority than user programs. The Amiga gives control to whichever running program has the highest priority. The Input Device, File System, and TrackDisk Device are normally in waiting mode. If you increase the priority of a user program, it will run at the expense of other user programs, unless it goes into waiting mode.

The Chosen One

So far, we've assumed that Exec treats all programs with equal respect. From a user's point of view, that's usually the case. When started from the Workbench or CLI, programs run at priority 0.

But Exec allows programs to have other priorities. Suppose you have two programs running at priority 1 and two programs running at priority 0. Exec will task switch between the two programs running at priority 1, and the other two will be ignored. The only chance that one of the lower priority programs will have to run is that the higher two will both go into Wait mode.

There are several programs on every Amiga that operate at a high priority. The highest is typically the 'input.device', a system program which handles input, which has a whopping priority of 20. Disk handlers and file systems also run high. The idea is that these programs are so critical that they must be able to respond immediately. Hopefully, they'll do their job quickly and go promptly into Wait mode. A slow, sloppy program operating at a high priority will gum up your system so badly that you may not be able to use it.

Occasionally you'll find a program that operates at a negative priority like -1. Such a program will never get in your way or slow down your system at all. It will only operate when all other programs are in Wait mode. Some titlebar clocks and memory meters are kind enough to operate at low priority, as are a few printer buffers.

Get the Message?

It's one thing to be able to run several programs at once, but Exec does

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We are the **Offical Public Domain Library of Antic Amiga Plus**, we have been the **Offical PD library of Amiga World.** Find out why these magazines choose us! Each of our disks are jam packed with only the best programs. The first two letters on each disk indicate the orientation of the disk; DD# intermediate to advanced - often contains source, WB# general interest - most programs can be run from the workbench, and FD# games and entertainment. Order our disk based catalog and receive a coupon for a **complimentary** volume with your next purchase. We always use only SONY disks!

Featured Disk

WB88abc: The Complete Bible - A three disk set, with the entire text of the New Testament and Old Testament. Great search utilities.

New Disks

FD57: Arcade Games Includes 2 true commercial quality games. MegaBall is the successor to Ball; features 5 full musical scores, multiple levels and addicting gameplay. Gravity Attack is a psychadellic trip through several different worlds--each distinctly different.

FD58: GAMES! Includes Steinschlag; a great Tetris clone from Germany with music. SCombat: simulate battle between up to 40 players & monsters. Imperium Romanum: Battle up to 4 players for control of the Mediterranean in this Risk-esque game.

FD59: Game Potpourri Xenon III is an almost exact clone of the commercial game of the same name...a great shootemup. Crossword will take lists of words & automatically generate crossword puzzles for any Epson compatable printer.

WB92: Animation Utilities Includes CyroUtils; utilities for splitting, combining, and creating animations from IFF picture files. Also includes two animations to view or manipulate

DD79abcd: Amiga C Tutorial - This is the most comprehensive C language, Amiga orientated set of tutorials available. Includes full working examples, source code and an incredible set of lessons. Included are full discussions and examples of every topic on Amiga programming. Four disk set, counts as three.

Other Great Disks!

FD5: Tactical Games - BullRun - a Civil war battle game, Metro - you play the role of a city planner. Build wisely and your system will be a success, but poor planning will lead to disaster and financial ruin. Very very habit forming.

FD6: GAMES! - This disk is chock full of games including; Checkers, Clue, Gold - A new slide the pieces puzzle, Jeopard - An enhanced version of Risk, RushHour - Surprisingly addicting, and SpaceWar - Best described as a cross between Combat-Tanks and asteroids.

FD7: PACMAN - This disk contains several pacman type games including; PacMan87, MazMan and Zonix.

FD9: Moria -. This has great graphic controls, multiple spells, similar to Larn and Hack. Play time several weeks!

FD10: HackLite - A dungeon adventure game. Considered a must-have classic. This is the second release of this game on the Amiga. Great Amiga graphic interface. Play time several weeks!

FD11: Las Vegas and Card Games - Las Vegas Craps - The best Las Vegas Craps simulation every written for any computer. Contains extensive HELP features, Also Thirty-One,VideoPoker and more.

FD12A,FD12B: Star Trek, The Game - This is by far the best Star Trek game ever written for any computer. It features mouse control, good graphics, digitized sound effects and great gameplay. Counts as 2 disks. Req. 1Mb and two drives (or hd).

FD13: Board Games - contains multiplayer Monopoly, Dominoes, Paranoids, and others.

FD14: Dungeon Master Hints and Arcade Games - DM maps, spells, item location, and hints and more, also on this disk, Hball - an arkanoid/breakout type game, Trix - a Qix type clone.

FD17: Educational Games - This disk includes several games for the younger members including geography, math, science, and word games, also includes Wheel of Fortune.

FD20: Tactical Games - MechForce(3.72); A game that simulates combat between two or more giant, robot-like machines. Simple words can't begin to give you the feel of piloting a 30 - 40 foot tall, fire breathing, earth shaking colossus that obeys your every whim.

FD26:Arcade Games - Marble_slide, this is a truly commercial quality game. Similar to a Lucas game named PipeDreams, excellent playability and entertainment, Mutants , a small version of the arcade game of the same name, also SuperBreakout a pong/arkanoids type game.

FD27: Arcade Games - This disk is loaded with some great games. Includes, Raceorama a great racing car game with ten different courses, MiniBlast a helicopter gunship type clone, Shark in the same class as froger, and SBreakout the original breakout with more.

FD29: Shoot'em up's - WWII - you're the pilot of a WWII plane flying through enemy territory, you've just been spotted, good luck on you mission, SpKiller - try and penetrate enemy lines with this game, and Retaliator - another great game.

FD31: Games! - Air Traffic Control - a good ATC simulation game, Black Jack Lab - a full featured set of card games, ChessTel - play chess with your friend in distant and remote places with this game and a modem, labyrnth - a well done text adventure game (like an infocom game), and MouseTrap - a 3d maze game.

FD32:Flight Simulator - Includes an instrument flight simulator for a DC10.

FD33: Arcade Games - Ffreddy a mario brothers type of game, Gerbils a target practice game, PipeLine a German interpretation of Pipe Dreams, Tron a light cycles version, and wetroids a wonderful version of asteroids with a hilarious twist.

FD34: Games - Includes WellTrix a derivative of the addictive game of tetris, and new version of BackGammon. Also included are several new "Schwabie type Hacks".

FD35 Omega (v 1.3) - A new outstanding dungeon and outdoors adventure game in a similar vein as hack, rouge, and moria. This version is considerably faster and better that all previous versions. Play time several weeks or months.

FD37a & b:Tactical Games - Empire (2.2w) This great game comes highly recommended. With a full-featured graphic front end.

FD38:Games - Cribbage Master - A great cribbage game and tutor, Spades - a well done card came, ChineseCheckers - A computer version of this classic, Puzz - a slide piece puzzle game and construction set.

FD39a & b:Tobias Star Trek - This is a new, completely different version of Star Trek than that found on FD12. This one was created by the German author Tobias. Now with English instructions. Very Excellent!!! Counts as two disks. Requires 512k memory, a 500, 2000 or Pal.

FD40:Arcade - MiddleEast - a timely arcade game of death and destruction set in Iraq, BackToTheFutureII - a very playable demo version of this soon to be released commercial game, City - a missile command clone.

FD41:Games - Includes Capital Gains - a stock market game, Ball a Arknoids type of clone with many great twists, and Desert Shield - a search and destroy conquer theme.

FD42:Games - Includes SpaceWar3 - a remake of this original Amiga classic, Trippin - a fascinating board game of intrigue, strategy, and player manipulation, Dominion - an engrossing strategy game of galactic war and conquest, Frog - a frogger type clone, and Mines - a very good strategy board game.

FD44: Game - Mechfight is an out of this world role-playing adventure comparable to hack and moria. The setting, interplanetary colonies and space stations. In your quest to explore the world, take time out to liberate bad guys of their most valuable possessions, engage in a mortal combat or two against robots and alien life forms, pick up a new amiga 9000. Most of all, don't forget to stay alive...

FD47: Arcade Games - Contains DownHill - a demanding computer slalom ski game, MicroPac - a Workbench mini-pacman game, CrackOut - a break out clone, Jet - a superb aerial dogfight game, AmegaRace - an interesting asteroids type of game, and WindyDay - a unique arcade shoot'em up.

FD49:Chaos Cheats - This disk contains an everything you wanted to know about cheat set for Chaos Strikes Back, including full maps, spells, object locations, super characters and more.

FD50: Submarine Game - Sealance, one and a half years in the making, this is an outstanding submarine tactical game. Commercial quality, highly recommended.

FD52: Classics Games - PetersQuest a well done Mario brothers type of game, Jymbc a two player missile command clone, and Vstank a tank commander game.

FD53: Great Arcade - On this disk is a wonderful implementation of the ever popular classic arcade game Defender. Also contain Air Race a WWII flying ace arcade game, and Psycoblast new creation idea game.

FD56: Arcade - Includes SpaceWar, HueyRaid a well done helicopter arcade game, and PowerPong a great expanded pong game.

WB2: General Interest - contains, Galaxy a program that represents the collision of two galaxies, Larn - an adventure/action game similar in concept to rogue or hack, but with a much different feel. Try it, you'll like it!, StarChart - a program that lets you display and identify about 600 stars, galaxies and nebulae visible in the Northern hemisphere.

WB4:Telecommumnication - This disk contains several excellent pd communication programs designed to get you on line quickly and easily, Access (1.42) - A very nice ANSI term program based on Comm v1.34, but with the addition of transfer protocols, Comm (1.34) - Last version of one of the best public domain communications programs ever made on the Amiga, Handshake (2.12a) Handshake is a Full featured VT52/100/102/220

WB5 - Fonts #1- Several fonts (35) for the Amiga, also included are five PageStream fonts,and ShowFont - a font display program.

WB6: Video Fonts #2 - ShowFont(4.0) This program allows you to quickly and painlessly view all 256 characters in a typical font. Large AmigaDos system fonts (many up to 56pts).

WB7: Clip Art - This disk is loaded with black and white clip art. Art includes, trees, watches, tools, US and State maps, and more.

WB9:Icons - Truly a multitude of various types and kinds. Also includes IconMiester, IconLab, and others great utilities to help generate icons.

WB10:Virus Killers - The latest and best VirusX(4.0), Kv(2.1), and ZeroVirus(1.3).

WB11: Business - Clerk(4.0), finally a full featured business accounting PD program for the small to medium company. Includes receivables, payables, end of month and much much more.

WB12: Disk Utilities - This great disk is loaded with wonderful utilities for everything including making disk labels, disk cataloging, disk optimizing, disk and file recovery archive and organizing, and all sorts of file manipulation. A real must have!

WB13: Printer Drivers and Generator - over 70 different drivers, and if these don't do it, with PrtDrvGen you can make your own.

WB14: Video- on this disk are several utilities for the video enthusiast. We have included multiple slates, video titling, Bars and Tone, Gray Scale, Screen fades and swipes, Interlace toggles, and SMPTE Calculators .Also on this disk is a full featured video cataloging program.

WB15: Business - This disk contains a spreadsheet, a database, a project/time management program and financial analysis (stocks).

WB16: Business - This disk contains an inventory manager, a loan analysis program, a great calendar/scheduler, a rolodex program, and pennywise a good "Cash Book" accounting for home or office.

WB18: Word/Text Processors - This disk contains the best editors. Includes,TextPlus (v2.2e) a full featured word processor, Dme(v1.35) a great programmers editor with strong macro features,TexED(v2.8) an enhanced Emacs type editor, and a spell checker.

WB20: General Interest - DiskSalv V1.42 a disk recovery program for all Amiga file systems, FixDisk V1.0 another file recovery program with features DiskSalv doesn't have, 3DLookt gives a 3D appearance to your WorkBench, Clean V1.01 a program to de-fragment memory, Tracer - trace any part of an image.

WB22: Fonts #3 - Several more great fonts. These, like the other font disks work great with Dpaint and WYSIWYG word processors.

WB23: Graphics and Plotting - Plot (20b) a three dimensional mathematical function plotter. Can plot any user defined function, BezSurf2 - produce awesome pictures of objects one could turn on a lathe. Can also map iff image files onto any surface that it can draw. Now compatible with most 3D packages, and VScreen - makes a virtual screen anywhere, great for DTP .

WB24:Animation and Paint - On this disk, DA a complete commercial quality cell orientated animation package. Movie an "ANIM" player for standard animation. QuickFlix an IFF slide show and cell animation program. Also on this disk are two PD paint programs of good quality.

WB25:Educational - On this disk are two programs that can generate maps of differing types, World Data Base uses the CIA's data base to generate detailed maps of any entered user global coordinates. Also Paradox a great demonstration of Albert Einstein General Theory of Relativity.

WB26: Disk Utilities #2 - MrBackup, KwickBackup - two well done utilities to help with harddisk and floppy disk backups, FileMast - a binary file editor, Labelprinter - Disk label printer with very powerful features.

WB27: Nagel - 26 Patrick Nagel pictures of beautiful women.

WB29: Graphics and Sound - This disk has several different Mandelbrot type programs for generating stunning graphics. Includes, MandelMountains - a realistic terrain generator, Fracgen - generated recursive fractals from user input, Mandelbrot and Tmandel - two fast mandelbrot generators, also Mostra - the best IFF display program to date, will display ALL IFF's including Dynamic HAM, and Sound - a great IFF sound player, will play anything. Try this disk, you'll love it!

WB33:Circuit Board Design - several terrific routines for the electronic enthusiast, Including PCBtool - a circuit board design tool, LogicLab - circuit logic tester, and Mcad (1.26) a well done new release of this PD CAD program, now comes with predrawn common circuit components for insertion into schematics.

WB34: Utilities - Several well done utilities, some will require moderate knowledge of a CLI or Shell for setup, Chatter Box - this one will play any user defined sound after any event (ie. disk insert, mouse click, disk removal...), , Artm - The Amiga real time monitor, gives you full control of the Amiga OS, very powerful program, Helper - help program to make learning the CLI easier, and more!

WB35: 3d Graphics - This disk contains several neat programs to use with your 3d modeling/raytracing programs 3dFonts - Full vector font set for use with 3d programs, FontMaker - make 3d fonts from any system font, Make3DShape - create 3d shapes from any image, DumptoIFF - create 3d animations preserves pallet, and World3d - a demo program of a front end for use with DKBRender.

WB36: Graphics - On this disk are several programs to create stunning graphical images including, MPath - creates swirling galaxy images, Roses - produce an unlimited number of variations of images that a symmetrically similar to a rose,

WB36 cont. SimGen - display those spectacular images as part of your workbenck screen, and RayShade - a very good raytracing program, create your own beautiful 3d graphics.
Wb37: Educational - Educational games and puzzles that cover math, geography, spelling, and books. Ages 6 - 15
WB38: Plotting and Graphics - Plotxy is the most powerful full featured plotting package. Used by many colleges and universities. A welcome addition to our library! Highly recommended. Plans - a incredibly well done Computer Aided Drafting program, very full featured. Tesselator - a program that helps generates fantastic looking, recursive M.C. Ecsher type pictures.
WB39: Music - Intuitracker is a German offering of an exquisitely well done program that allows you to play music on your Amiga with CD like controls. Lets you strip out music from your favorite games or others and include them in your music library.
WB40: Music - "CD on a disk", 90 minutes of modern music on this well presented collection.
WB41: Music - MED an incredibly well done, full featured music editor. Create your own stunning music directly on your the Amiga. Similar to SoundTracker but better. Very powerful easy to use program.
WB43:Business - This disk contains AnalytiCalc - probably the most powerful spreadsheet program on the Amiga. A full featured spreadsheet with many features expected in a commercial package. Requires 1.2 MB of memory!
WB46:Clip Art - HighRes clip art with the following motifs - embellishments (borders, dodads ,...), people, and transportation.
WB48: Clip Art - HighRes clip art with the following motifs - Holidays, music, medical, and misc.
WB49abc:Animation Sampler - On this three disk sampler set (counts as two disks) are some of the best animations that have been created over the last three years. Several examples of "Movie" type animations some with spectacular raytraced reality (coolroby, watch, spigot and egg). Also several european style or "Demo" animation with incredible graphics and outstanding electronic music (akrilight, copersine, doc, dps2010, impact, and logodemo). These truly show off the creative edge of an Amiga!

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WB50: Animation - Seven of the best european style animations or "Demos", including - scientific 451, subway (a U.S. entrant, also our favorite), sunride, thrstdemo, tnight, waves, and woow.
WB51: Animation- On this disk are two excellent movie style animations including ShipRotation - a futuristic space ship orbiting a surrealistic world (one of the best), and RV-3 - a dpaintIII anim of a rather wacked out airplane.
WB53:Graphics- The disk contains C-light - The easiest to use raytracing we have seen to date. This one started out life as a full featured commercial product similar to Sculpt3d. Raytracing programs can generate stunning, realistically shaded objects. Also, sMovie - a full featured video text titler similar to ProVideo, Broadcast Titler. Great video scrolling, wipes, special effects, and more...
WB54:Printing - This disk contains several routines to help with the chore of printing. Includes Gothic - Finally a Banner printer for the PD! PrintStudio -a well implemented all-purpose printer-utility with a very comfortable graphic interface and many advanced features, Lila - with ease, print ASCII files to a PostScript printer, and many more.
WB55:Application - XCopyIII - a full featured disk copier, make backups of write protected disks. RoadRoute - find the quickest route from one city to another, highway description included, Diary - a diary program like "Dougy Howard M.D", Cal - a calendar program, Magman - a database tailored to maintain records on articles and publications.
WB57:Animation - This disk has several "Demo" style animations, Including, Blitter, Lolly, Sun5, vertigo, vortex, and xenmorph.
WB59:Business - contains a great, very full featured stock market technical analysis and tracking program, also an appointment calendar, and more.
WB61:Intermediate Utilities - Includes programs to help to drasticaly decrease flicker in interlace and hi-res modes (antiflick), an Atari-st emulator, an eprom programmer, turn your amiga into an eight channel digital data analyzer or ocilloscope, and more.
WB62:Midi Utilities - Several useful midi utilities including, programs to transfer to and from several music programs to midi, a midi sysex handler, a midi recorder with timebase, display midi info, file sequence player, and a few scores.
WB63:Disk Utilities #3 - Several highly recommended programs to aid in removing duplicate files from your hard drive, performing file backups, Binary editing, fast formatting, file recovery, disk track recovery, and forced DISK VALIDATION of corrupt disks.
WB66:Icons #2- Lot's of neat icons. Also, several wonderful programs that to let you create your own icons, modify and manipulate icons and info structures.
WB68:Music Utilities - several good utilities for the Amiga music enthusiast. Includes, Noisetracker - a great music creation program, Sonix2MOD - converts sonix to .mod files which then can be used by noisetracker, soundtraker, and MED, SpeakerSim - a speaker design tool demo, Wondersound is an additive harmonic instrument design tool with a separate envelope design window and 16 relative harmonic strength and phase angle controls.
WB69: Music - This disk has over 90 minutes of classical and modern electronic music for you Amiga.
WB70:Desk Top Pub - Atcp - transfer Macintosh screen fonts, Mac or IBM format .AFM metric files, to Amiga screen fonts and PPage .metric files. With this program open door to the libraries of Adobe and PostScript type!, Calendar - month templates in PS form, Post - a full featured post script file display and print utility.
WB71:C64 Emulation - The A64 Package is a complete, very powerful, Commodore 64 emulator.
WB75: Music - over 100 instruments files (.inst) and sample sound files (.ss) for your music programs.
WB76: Applications - This disk contains Stichery - a often requested knitting design program, Lotto - a rather complete lottery tracking and prediction utility, SSS - this screen capture program can grab almost any screen including games, Today - a personal calender, Tarot - fortune teller, and Grammar - grammar checker.
WB78: AV - On this disk are two Amiga Vision programs (bubbler, sync) written by Lou Wallace, chief technical editor of Amiga World. These programs are marvelous examples of how too's with AV.
WB79: Home & Business Accounting - Includes Ckbacct - the most complete checkbook accounting program going, LCDCalc - this well done calculator has a very large display and operates from the keyboard or mouse, Mileage master - monitor your automobile mileage with this mileage log, Grammar - a grammar checker, and Worldtime - find out what time it is in up to 50 global cities.
WB80:Graphics - Raytracing programs generate absolutely stunning realistic looking planes, rockets, buildings..., and surreal images often consisting of highly polished spheres and objects. 3-D Master is the most powerful EASY-TO-USE of it's kind we have seen to date. This is easily better, and more full featured, than similar commercial programs costing in the hundreds of dollars.
WB81: Great Applications - DataEasy a very easy to use, database program. Don't let the ease of use fool you, this is a very full featured database program including full printer control for address labels and mail merge applications. Also includes, TypeTut a good typing tutor, RLC a full featured label printer, Banner, a multi-font banner maker, and Budget a home accounting in a program. Highly recommended.
WB82:Animations - Four full length, well done "movie" style animations. Including, Coyote, JugglerII, GhostPool, and Mechanix. Two disk set, counts as one!
WB83: Computer Art - this disk has some of the best Amiga generated computer art that we have collected in the past 5 years.
WB85: Graphics - Contains several programs for manipulating 24 Bit color images (ham-e) and a rather nice Iff Image processing package.
WB86: Amiga Vision - Contains the Centurion Press, An Amiga newspaper by Lou Wallace.
WB90: Rippers, Strippers and Beats - For the Amiga music enthusiast, this disk contains many programs designed strip music from your favorite games and programs. Music can then be played with your favorite Pd Music program. Also contains Drums, a very nice drum machine. This disk can require moderate knowledge of the CLI.
DD45: AREXX PROGRAMS - This disk contains several useful arexx programs and examples, PopCLI4 - The latest of a must have utility.
DD47: Pascal - This disk contains everything needed to program in Pascal. Includes, A68k (1.2) 68000 assembler, Blink linking software and PCQ (1.0) a modest Pascal sub-set compiler.
DD49: C Compiler - contains zc(1.01) fully K&R, zcc(1.0) front end, A68k(1.2) assembler, Blink linker.
DD50: ARexx #2 - a must have set of tutorials on ARexx and several useful examples and utilities for ARexx development.
DD51: Circuit Analysis - Aspice (2.3) A full featured program for electric circuit analysis.
DD52: Scientific - Includes Elements - an incredibly well done periodic table program with source, Scientific plotting - over 600k of Lattice C source routines that can be included in your own programs.
DD54: Compression - This disk is loaded with ALL of the best file compression programs and aids for the Amiga. Many of the programs can be used by the new user. Includes Arc(2.3), Lharc(1.0), Lhwarp(1.03), Pkax(1.0), PowerPacker(2.3a) a must have by all, Zip(1.0), Warp(2.04), and Zoo(2.0). Also IFFcrunch an excellent compression for IFF files.
DD55: ARP - On this disk you will find the complete ArpRel3.0 release including the full user docs, the full Developers guide. ARP is the official AmigaDOS Resource Project (ARP) release 1.3. ARP makes many improvements to AmigaDOS and makes your system easier to use from the CLI.
DD57: Advanced Utilities - Msh - like Cross-dos, copies files to and from MS-DOS, Pal-NTSC - convert any pal program to NTSC and vice versa, Also several utilities that improve your startup-sequence, plus 25 more programs.
DD62: Basic and Xscheme - Cursor - a full featured Amiga Basic compiler, sbasic and ftext - several wonderful routines to help in basic programers, and Xscheme - an interpreted object oriented language.
DD64 Amiga Programmers Manual - The fully comprehensive Amiga programming manual with source code examples and easy to understand tutorials!
DD65 C Tutorials - Several well done tutorials on how to program the Amiga. Includes tutorials and working examples on Device drivers, IFF reads and writes, Sound implementation, Arcade game design and implementation, Double Buffering, and others. A must have for Amiga Programmers.
DD66 Programming ToolBox - Many programs to help in your development efforts (most for C some for basic) Includes programs to generate requesters, an incredible spritemaker toolbox, to greatly aid compiling, convert DPaint brushes to C structures, a great library manager, and many more wonderful time savers!
DD69:Advanced Utilities - SerNet and ParNet - Connect two Amiga's and share resources, MemMonitor - Similar to WFrag but greatly improved, Selector - put menus on your workbench screen, and more.
DD71:C compiler - This disk contains Dice, Matthew Dillon's full featured, powerful C compiler and environment system.
DD72:VT Emulators - Contains three powerful, full featured vt emulators, with many advanced features including kermit, xmodem and tektronix protocols. VaxTerm, VLT, and more.
DD77: Fortran - Contains a full featured FORTRAN77 environmental development system. Also contains EzAsm a strongly macro dependent 68000 assembler.
DD78: Menus & System Enhancements - Several neat programs to aid in launching programs from special icons (Next computer style), adding WorkBench menus and more. Also contains many useful programs to determine operation system configuration, memory usage, load and many other important utilizations.

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Circle #140 on the Reader Service Card

more. Exec allows programs to communicate with other programs. It does this with a message-based system. One program can send another program a message. Hopefully this second program is expecting the message. After it has read the message, it replies to it, so that the sender knows the message has been received.

ARexx, the macro language that comes with AmigaDOS 2.0, uses this message system to let you tie programs together and control them with ARexx scripts. This is a powerful capability, and many programs now have ARexx ports. An ARexx port is simply a place where ARexx messages can be sent.

Take Control

Several public-domain and shareware programs let you inspect and adjust the priority of your programs. Be careful with these. Be conservative with your adjustments, keeping priorities in the range of -3 to +3.

You may not realize it, but you already have three programs that let you master the multitasking capabilities of the Amiga. They're found in the C directory of your Workbench disk: *Status*, *Break*, and *ChangeTaskPri*.

Status gives you information about the programs running. From the CLI, type 'STATUS FULL' and you'll see a list of all programs which were started from a CLI. (Unfortunately, you will not find programs that you launched from Workbench in this list.) Among the information is the priority of each program. You'll also see the process number, which AmigaDOS uses internally.

You can send a break command (to try to halt a program) by typing 'BREAK n', where n is the process number you obtained with the *Status* command. Using *Break* is similar to pressing CTRL-C. Try 'BREAK n ALL' to set all four attention flags. (Not all programs will respond to Break.)

You can change the priority of a program with the *ChangeTaskPri* command. First, use the *Status* command to find the process number of the program you want to affect, then type 'CHANGETASKPRI priority n', where *priority* is the new priority and *n* is the process number. Type 'CHANGETASKPRI priority' to change the priority of the current CLI and all programs that you subsequently start from that CLI.

DON'T MULTIPLY - NEVER DIVIDE

Microprocessor math tips

by Jim Butterfield

This article will cover a few related subjects on microprocessor math operations, starting with multiplication and division and touching briefly on floating point math.

Some time ago, a member of the original Amiga development team was speaking to a user group, and was asked to comment on the 'faster' CPU chips, 68020 and beyond. In discussing the features of these processors, he commented, "It's so fast that you can even use the Divide instruction!"

This might have puzzled some listeners. The 68000 has two Divide instructions - DIVU and DIVS, divide Unsigned or Signed. Are these somehow 'forbidden'?

The "Don't Multiply, Never Divide" slogan was born because of the relatively slow speed of the 68000 instructions. We're talking about fixed-point multiply and divide, of course; unless you have a math coprocessor, floating-point numbers always need a program to perform arithmetic. On the 68000, integer multiplication takes about 70 clock cycles and division takes 140. With a 'slow clock', that translates to roughly 10 and 20 microseconds, respectively. Pretty fast compared to your fingers working a pocket calculator. But a loop that may be executed many thousands of times will multiply the timing. No pun intended.

As you go to more powerful processors, you'll likely have a faster clock speed within your computer. And the instructions themselves will use fewer clock cycles. As a result, the multiply/divide instructions no longer seem sluggish, and the "DMND" slogan becomes inoperative.

Table 1 shows comparative speeds of several processors. It doesn't compare overall speeds: for one thing, that depends on clock frequency; for another, the more advanced chips have extra instructions to help with multiply/divide. And the table can't make any special allowance for the 'cache' capability of the more powerful processors. Even so, it's easy to see that the 68000 is outdistanced by its big cousins.

Table 1.
Selected instruction speeds, various processors.
Maximum basic value, in clock cycles

	MULU.W	DIVU.W	ASL.L(2)
68000	70	140	12
68010	40	108	12
68020	28	44	8
68030	28	44	8

ASL timing shown is for a two-bit shift; timing shown is typical of the other shift/rotate instructions.

Multiply Troubles

The 68000's multiply and divide instructions are limited. They deal only with 16 bits (one word) times 16 bits giving a 32-bit (long-word) product, or 32 bits divided by 16 bits to yield two 16-bit results: quotient and remainder. In other words, the product must be a long word (maximum value 4,294,967,295) and all other values must fit within a word (maximum value 65,535).

That's not too handy. If you wanted to take one third of a million dollars, which is a division operation, the result wouldn't fit within a word; you'd get an 'overflow'. Similarly, if you wanted to take an address within the Amiga and multiply it by four, you couldn't be sure that the address would fit into a 16-bit word. In converting input or output values, we often want to multiply or divide by ten; again, the operation is severely hampered by the 16-bit limitation. In such cases, the 68000 multiply and divide instructions would need help - extra coding - to do the job.

The extra coding isn't especially difficult; it just slows things down. Two 32-bit numbers can be multiplied piecewise: top half times top half, top half times bottom half, and so on. A similar method may be used with division, using the remainder from the first division as the divisor in the next step.

Float Note

Most of the above comments apply to the 68000's handling of integers ('fixed-point' numbers). In a moment, we'll discuss the impact of these fixed-point operations, and a few steps that can help speed your programs. But

there's another type of number: floating-point. This type of number has been devised to hold values which are very large or small, or which contain fractional parts. Floating point operations can also raise speed questions; we'll take a moment to discuss some aspects of these.

Floating-point numbers come in two 'sizes', or precisions: single and double. Double-precision numbers are more accurate, but calculations take place more slowly. Usually. Read on.

There are two *styles* of floating point numbers: Motorola and IEEE. Motorola was an earlier standard, and its library functions seem more friendly than those of IEEE. By the time Workbench 1.3 had settled in, the rule was: use the Motorola standard for single precision, the IEEE for double. That's what the libraries supported, and that's how most programmers did things.

Table 2.

Floating Point Library Units.

The full name of each of the following shared libraries consists of the stem plus '.library'. The library will be found in the LIBS: logical device unless otherwise noted.

Simple functions	Transcendental functions
mathffp(1)	mathtrans
mathieeedoubbas	mathieeedoubtrans
mathieeesingbas(2)	mathieeesingtrans(2)

The IEEE libraries will automatically search for a math coprocessor chip, and use it if available. Simple functions include such things as: convert to/from integer, test, compare, negate, absolute value, add, subtract, multiply, divide, ceiling, floor. Transcendental functions are largely trigonometric and log/exponential, plus powers and square root.

Notes:

1. Located in Kickstart/ROM.
2. Furnished for DOS 2.0 only.

The rule *seemed* to be: use single precision - that would be the Motorola standard - when you could get away with it. Use double precision (IEEE) when single precision accuracy wasn't enough; but be prepared to see the program run more slowly.

There's an extra ingredient in the mix, however. When you call an IEEE function, the library will automatically use the math coprocessor chip if it's available. The Motorola format libraries won't do that. Many Amiga owners who plan to do a lot of computation have fitted their computer with the math coprocessor chip. The curious result is this: on many computers, IEEE double precision runs faster than Motorola format single precision!

The programmer who wants to maximize a program's speed has the dilemma of trying to guess what computer hardware will be used for the program. Will math coprocessors be common? If so, use IEEE double-precision even if it's not needed. If not, use Motorola-style numbers where possible.

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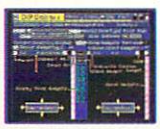

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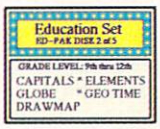

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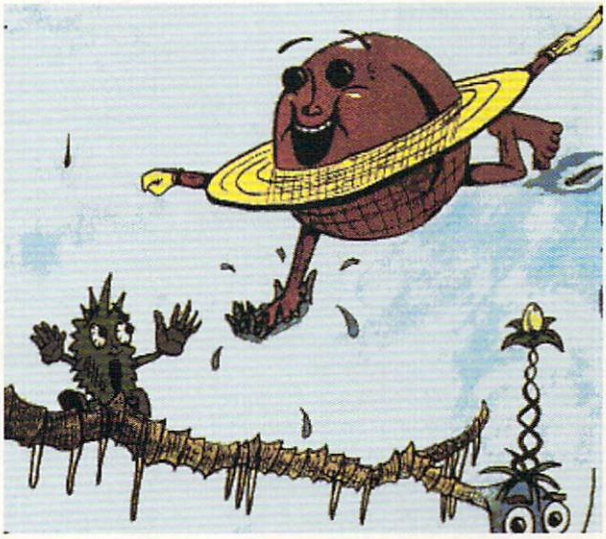

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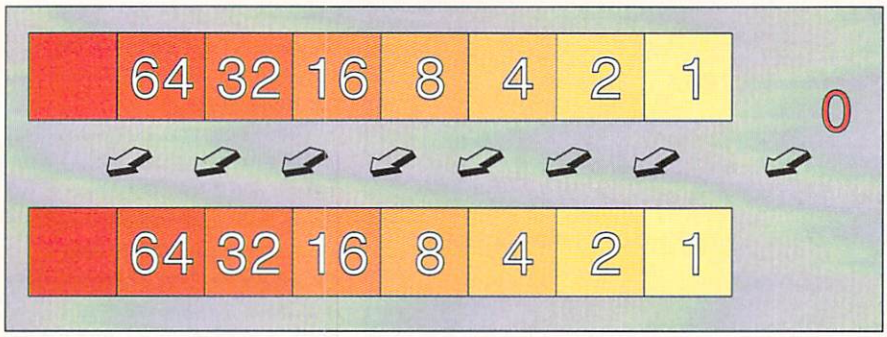

Within a computer's memory, each bit carries a "weight" that is double that of the next lower bit. A "Shift Left", which causes all bits to move one position to the left, causes the value to double, since each bit now carries a weight that is twice its previous value.

AmigaDOS 2.0 may eventually clarify the situation, since it provides a single-precision IEEE library; and that library, too, will detect and use a math coprocessor chip. For an interim period, at least, the programmer will still have to make decisions about the target computers: will DOS 2.0 be sufficiently universal that the IEEE single-precision libraries may be assumed?

Speed Note

Don't take speed arguments out of perspective when we classify a 20-microsecond instruction as slow. Execute a thousand such instructions within a program and you won't be able to measure the difference in timing they cause.

But keep in mind that loops within loops (... within loops, ...) can increase the number of times an instruction is executed. And when you get up to a factor of millions of executions, yes, you'll start to notice a few microseconds lost on each instruction.

Also keep in mind that a good compiler may optimize your code, substituting faster instructions in place of slower ones. Even an assembler can make minor improvements. Some of the following techniques may be built into your compiler.

Downsize

We've mentioned that the 68000 can multiply 16 bits by 16 as an instruction. If you have a program that will need to do a good deal of multiplication of relatively small values, define those values as small. When you're writing in C, the word SHORT usually does the trick best.

Thus, if you have a group of students in a school who typically eat five pizzas each per day, your multiplication to calculate total pizza consumption will go faster if you define the number of students as variable SHORT STUDENTS. That's no reflection on the physical size of the students, of course, even after five pizzas a day. Keep in mind that the total must not exceed 65535 or 32767 for unsigned or signed values.

From a programming perspective, we might like to think of another situation, in which each student's computer identity is assigned a *data structure*. Say: Name, Address, Phone, Date of Birth, Pizza capacity, and so on. To find a particular student's data structure, the 'student number' must be multiplied by the structure size. If you're doing a lot of detail work, you might need a lot of such multiplications; if you can, keep the index value (in this case, STUDENT) as SHORT.

Powers of Two

Frequently, a program wants to multiply or divide an integer value by a power of two - 2, 4, 8, 16 and so on. You can neatly sidestep multiplication and division by using a *shift* instruction. Figure 1 shows the principle: if you shift a binary number left one bit, you multiply its value by two. Shift right to divide by two. And you may multiply or divide by 4, 8, or a higher power of two by means of a little shift work. No pun intended.

Beginning programmers in 68000 assembly language are sometimes confused by the large variety of shift and rotate instructions. For most simple work ASL (Arithmetic Shift Left) or LSL (Logical Shift Left) will do the multiplication by two; ASR and LSR will Shift Right to divide. Use the 'Arithmetic' commands if you have signed numbers, otherwise use 'Logical'. The 'rotates', ROL, ROR, ROXL, and ROXR, can be left for special purposes such as very large numbers or custom bit-juggling.

In C, you can double or halve an integer value by using the shift symbols, << and >>. Thus *X=STUDENTS<<2;* takes the number of students and shifts the bits of that value two positions left. That multiplies the value by four. Keep in mind that a good C optimizing compiler will do this kind of conversion automatically. If it reads '*4' ('times 4') from your source program and an integer value is involved, it's likely to convert the calculation to '<<2' and speed things up.

AMIGADOS SCRIPTS

Part Two

by Chris Zamara

Variables, expressions and conditional loops in DOS scripts? Well, sort of...

In our last article about DOS Scripts, you learned what DOS scripts are used for, and a few basic techniques for creating scripts and getting command-line arguments from the user. In this article, we get into the 'fun stuff': techniques so powerful that you might almost think you were using a real programming language. Almost... but not quite. Scripts are, as Commodore software manager Andy Finkel once put it, "an ancient and dishonorable form of programming." You should realize that DOS scripts will never give you even the most basic facilities of a proper language, like arrays, procedures, and string handling. If you need to do anything exceptionally fancy with a script, you're better off using an ARexx script instead (if you have ARexx). On the other hand, you'd be surprised what you can do with DOS scripts given the features explained in this article, along with a little ingenuity.

Before trying any of the techniques

shown here, you must have at least version 1.3 of AmigaDOS installed on your system; many of the more advanced features, like environment variables, were only implemented with this release. AmigaDOS Version 2.0 has even more goodies, but since most people haven't installed V2 yet, we'll stick with things that work under both 1.3 and 2.0.

Numeric arguments

In Part 1, you saw how command-line arguments can be used in a script somewhat like variables, by using the argument name in the script surrounded by angle brackets (or the bracket characters of your choice, set using the .BRA and .KET directives.) These 'variables' can be used as arguments to other commands in the script, but what if you want to manipulate the variable in some way? Even the most primitive programming language lets you perform expression evaluation using constants and variables, and lets you make decisions based on the values of variables.

Let's take the latter capability: making decisions based on the values of variables. Part 1 showed how to make decisions by comparing an argument to some value, such as:

```
IF "<name>" EQ "Jimmy"
```

Using the VAL keyword with the IF command lets us compare numeric arguments for not only equality with another constant or argument, but also less than, less than or equal, greater than, greater than or equal, and not equal. Consider the following small script:

```
.KEY name,age
IF VAL <age> GE 18
  Echo "You're old enough to →
vote, <name>!"
ELSE
  Echo "You're only <age> - →
sorry, not old enough to  →
vote, <name>."
ENDIF
```

This script is executed with two arguments on the command line: a person's name and age. The IF command makes a decision based on the value of the <age> argument to inform the user whether he or she is old enough to vote. The GE keyword to the IF command stands for Greater-than or Equal. You can also specify GT for Greater-Than, and use the NOT keyword to negate the condition for any of these ('NOT GT' is the same as 'LE', 'NOT GE' is like 'LT').

(A note about the examples in this article: Commands and keywords are not case-sensitive in AmigaDOS. The examples in this article use all upper case for commands that are only used in scripts, like 'IF', and upper and lower case for general purpose commands like 'Copy'.)

Expression evaluation

You should know right now that DOS Scripts do *not* support expression evaluation. In most languages, you could use an expression like "a+1" instead of a simple variable like "a" or a constant like "1". DOS scripts don't have anything like that, but there is a command called *Eval* that lets you do simple one-step calculations using integers, and display the result or send it to a file.

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Eval requires three arguments: VALUE1, OP, and VALUE2. These are simply two values with an operator in between, which can be one of the basic four operations (+, -, * and /), mod, or a number of bit-manipulation operators. For example, the command:

```
Eval 3 * 4
```

would display "12" on the console, followed by a newline. The TO keyword lets you send the output to a file instead, for example:

```
Eval 3 * 4 TO ram:result
```

This would create a file in the RAM drive called 'result'. If you were to Type this file, you would see "12" on your console.

Eval has another important feature that makes it a bit more useful for use in a script: using the LFORMAT keyword, you can specify how the result should be displayed, along with any text. For example, suppose we added the following line to the 'voting age' script above:

```
Eval <age> * 365 LFORMAT="You→
have lived for over %n days, →
<name>!*N"
```

This would show a message saying how many days the user has lived. How does it work? First of all, LFORMAT is just a regular keyword; the '=' can be used instead of a space to separate any keyword from its associated argument. This just makes the association of the formatting string with the LFORMAT keyword a little clearer in this case. The message in quotes will be printed (or sent to a file) by *Eval*, and the embedded "%n" will be filled in by the result of the calculation, just as the embedded "<name>" is filled in by the NAME argument supplied on the command line. Finally, the "*N" at the end of the string causes a newline to be printed at the end; without this, you could display more text on the same line, using another *Eval*, *Echo*, or another command.

Environment variables

The above *Eval* example is obviously missing something: variables. You can use an argument as input to a calculation, but how do you change the value of a variable for subsequent calculations? Well, you can't change the value of an argument; these are based on the command line entered by the user, and are set at the time the script is run. You can, however, use a primitive sort of variable called an *environment variable* to store intermediate results. These variables can be used within your script, and can also be accessed system-wide by other scripts and from other shell windows.

Environment variables are simply files stored in the ENV: logical directory, which is usually set to the 'Env' directory in the RAM disk (AmigaDOS V2 also adds a new form of *local* environment variable, but we'll stick to the simpler global ones for this discussion). The variable name is simply the name of the file, and the variable's content is the contents of the file. A simple - if not very efficient - method of storage. You can manipulate environment variables in a number of ways from within a script:

1) Read and write to/from the file directly
2) Use the *Setenv* and *Getenv* commands
3) Use the variable's name directly with the '$' operator

Reading and writing

The first method is the most straightforward: you can send the output of any command to a file using the '>' output-redirection operator after the command, or by using the TO keyword provided by some commands. For example, to set a variable called 'days' to the result of <age> * 365, you could use the *Eval* command like this:

```
Eval <age> * 365 TO env:days
```

Environment variables are just files that can contain anything, not just numbers. Here are a few more examples:

```
Date >env:date
Echo >env:loopcount "25"
```

The *Echo* example above is a simple way to set an environment variable to any value, but a standard method is provided using the *Setenv* command: 'Setenv loopcount 25' simply writes the given string (25) to the 'loopcount' variable. Reading the variable can be done by Typing the file (Type env:loopcount), or by using the special *Getenv* command: 'Getenv loopcount'. The Setenv and Getenv commands make the process a little neater, and in AmigaDOS V2 provide options for dealing with local environment variables as well.

Calculating

By using environment variables as arguments to the *Eval* command, you can do simple calculations with them in your scripts. An example might be a loop counter to execute a series of commands a specified number of times. Using environment variables in this way isn't really a built-in capability of DOS scripts; it involves a little trick (what programmers might call a "kludge"). Remember the special "?" symbol for showing the template of a command or script? Part 1 explained that this allows the user to enter arguments that haven't been already supplied on the command line. By using keywords with arguments along with input-redirection and the question mark, you can use the contents of a file as command-line input to a command.

For example, suppose you wanted to subtract one from the 'loopcount' variable set to "25" in the example above. You could use *Eval* like this (you must do the above *Echo* command - or 'setenv loopcount 25' - first for this to work):

```
Eval <env:loopcount >nil: →
VALUE2=1 OP=- TO * ?
```

This strange-looking command should display "24" on your console - you've just subtracted one from a variable! (Not as convenient as saying 'loopcount-1', but no one ever said DOS scripts were pretty.) Can you figure out how this works?

You could set another environment variable to the result of this calculation by using 'TO env:varname' instead of 'TO *' in the command. If you wanted to set the environment variable itself back to the new value, you'd have to do it in two steps (you can't read from and write to the variable at the same time):

```
Eval <env:loopcount >nil: →
VALUE2=1 OP=- TO env:temp ?
Setenv <env:temp >nil: →
NAME=loopcount ?
```

The *Setenv* command above is simply

used to copy the contents of the temporary file "env:temp" back to the 'loopcount' variable. *Type* or *Copy* could have been used instead, but *Setenv* is a smaller command, and more accurately reflects what we're doing - setting the value of an environment variable. The same question-mark technique lets us use the contents of the temp file as a command-line argument to *Setenv*. The '>nil:' output redirection prevents command templates from showing up on the console.

Testing ENV: variables

Now you know how to set environment variables and do calculations with them. Only one thing remains: how to test their value in an IF statement. Fortunately, this doesn't involve a kludge like the Eval-command nightmare above: an elegant system is built into the IF command to handle this. Continuing with our loopcount variable, you could test it like this:

```
IF VAL $loopcount GT 0
```

The '$loopcount' represents the value of the loopcount variable (the contents of the file 'env:loopcount'), and can be tested like any other constant or argument in an IF statement. A SKIP command after the IF and before an ENDIF could be used to direct control to a label at the start of the loop so that the section could be repeated any number of times. Putting this all together in a script that counts down from 5 (which takes long enough):

```
Setenv loopcount 5
;repeat loop 5 times
LAB loop
;start of loop
Getenv loopcount
;display value of loop counter
; subtract one from loopcount
Eval <env:loopcount >nil: →
value2=1 op=- TO ram:temp ?
Setenv <ram:temp >nil: →
NAME=loopcount ?
IF VAL $loopcount GT 0
  SKIP loop BACK
;back to start of loop
ENDIF
Echo "Finished"
```

Here's a simpler example: the name/age script with a slightly new twist. It determines whether your age is an odd number of years, and reports its findings if it is. It has to use *Eval* to make a calculation (using the *mod* operator to determine the remainder of a division), then *If* to test the result.

```
.KEY name,age
Eval <age> mod 2 TO env:agemod
IF VAL $agemod EQ 1
  Echo "Gee, <name>, that's →
an ODD age!"
ENDIF
```

Return codes

Whenever a command is used from the shell or from a script, it gives back a *return code* that indicates if the command succeeded in its task. In most cases this return code is ignored, but it is often useful for a script to find out what happened as the result of executing a command.

A return code is just a number whose value indicates the severity of the error:

return code	Meaning
<5	No error
>=5	Warning
>=10	Error
>=20	Failure

Normally, the script will continue if a command returns a warning, but will stop and give a message for an error return. You can test for a warning using the WARN keyword with the IF command. Many commands return a warning in order to give you useful information in a script. For example, the *Assign* command has a special EXISTS keyword that simply causes *Assign* to return a warning if the specified logical device does not exist (the assignment has not yet been made). Consider the following script:

```
Assign >nil: EXISTS T:
IF WARN
  MakeDir ram:T
  Assign T: ram:T
ENDIF
```

This script checks to see if there is already a 'T:' assign, and creates a directory and makes the assign if there isn't. Using *Assign* in this way avoids the appearance of the "Please mount volume..." system requester.

Another good example is using the *Which* command to check that a certain command is available anywhere in the current command path (including the resident list); a warning is given if the command is not available. This way, a script can check that a command exists before it tries to use it.

As mentioned above, error return codes of ten or greater normally cause a script to stop executing. If you want to check for errors and continue the script, you can do so using the *FailAt* command. *FailAt* lets you set the upper limit of allowable return codes. If you use the command 'FailAt 30' at the start of your script, for example, you can check for IF ERROR or IF FAIL after any command, and continue the script even though the command failed in big way. 'Failat 10' is the default state, which you can use to reset regular script processing.

User input in scripts

Scripts normally go about their business automatically until they finish, but there are times when a script needs to know something from the user before it can continue. There are several ways to do this, and like the other advanced script techniques, none of them are terribly sophisticated:

1) Direct user input to a command using '?'
2) The *Ask* command
3) Menu selection using 'SKIP ?'

1. The first technique was covered in Part 1, and is similar to the technique used to accept the contents of a file as command line input. The user supplies any required arguments directly to a command using the '?' input feature. For example, consider this script fragment, useful in the Startup-Sequence of systems that don't have a battery-backed clock:

```
Echo "Enter date: " NOLINE
Date >nil: ?
```

This technique allows for a great deal of flexibility, but it can be dangerous, since the user has complete control over what the command does: the script can't filter out unwanted input.

2. In many cases, user input is simply required to get a yes or no answer to something. For example, an application's installation script might have an option for installing some sample files. A special command is provided for these kinds of questions: *Ask*. Ask displays a prompt, lets the user respond

with 'yes' or 'no' (or 'Y' or 'N'), and returns a warning if the answer was yes. For example:

```
  Ask "Do you want to install →
the sample file?"
  IF WARN
    ; copy sample files here
  ENDIF
```

3. In some cases, the question might not be a simple yes or no. You might want the user to select from a menu of choices, for example. This can be done by getting the SKIP command to accept user input, once again using the trusty question mark. The user must enter the name of an existing label; if an invalid label is entered, we can catch the mistake thanks to the ENDSKIP command. Consider this example:

```
  LAB start
  Echo "Select one of the  →
following options:"
  Echo " 1. simple install*N  →
2.  entire program*N 3. samples"
  Echo "Type 'Q' to quit."
  SKIP >nil: ?
  LAB 1
    Echo "Simple install"
  ; script for 'simple install'
    SKIP Q
  LAB2
    Echo "Entire program"
  ; script for 'entire program'
    SKIP Q
  LAB 3
    Echo "Samples"
  ; script for 'samples'
  LAB Q
    QUIT
  ENDSKIP
    Echo "sorry - try again"
    SKIP start BACK
```

The above example works like the 'case' or 'switch' construct in some programming languages. The ENDSKIP command acts like a barrier and doesn't let any skip go past it; we can thus use it to catch invalid input from the user, since a nonexistent label will cause SKIP to just keep on searching. You'll notice a new command has been introduced: QUIT. This simply causes the script to finish execution as if it had ended naturally.

And the fun continues...

Well, we've run out of space for this month, and there are still more tricks, techniques, and fun and games with scripts. Automatically generating scripts using the *List* command is one of these. Next month's final installment in this series will cover that and more.

Hardware

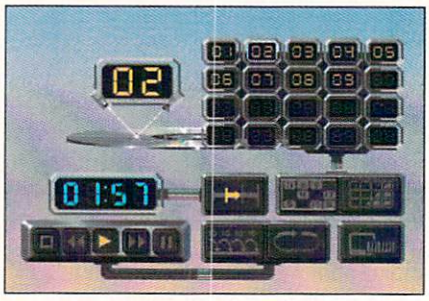
Morton A. Kevelson on

. . . Continued from page 43

can play audio compact discs without the TV, but you will be flying blind. CDTV will let you start, stop and skip tracks; however, its front-panel digital display does not indicate which track is being played, nor does it provide the timing information which is provided by most compact disc players. That information is shown only on CDTV's on-screen display. With the television turned on, the audio compact disc control screen automatically appears when a caddy that has been loaded with an audio disc is inserted into the slot. All of the audio compact disc playback functions which are normally found on high-end audio compact disc players are available on CDTV's control screen. The upper left quarter of the screen is devoted to a whimsical representation of the laser playing mechanism and the upper right quarter contains a calendar grid representation of the available audio tracks. Although the calendar only has room for 20 tracks, it will scroll to provide access to additional tracks. The image of the laser playing mechanism actually positions itself relative to the picture of the compact disk so as to correspond to the actual position of the laser as it plays the disc.

The bottom half of the screen contains the compact disc controls, including a scan mode which plays the first 10 seconds of each track and a randomizer which plays back the tracks in a different order every time it is used. You also have the option of customizing the playback sequence. The on-screen four-mode time counter can be used to show elapsed time or remaining time for the current selection or the entire disc. Any segment of the disc can also be selected to loop continuously.

Last, but not least, you can activate the CDTV's CD+Graphics or CD+MIDI mode. CD+Graphics and CD+MIDI are recent additions to the audio compact disc format. To an ordinary compact disc player, the CD+ discs do not look any different than any other audio compact disc. In fact, the CD+ discs can contain the same amount of music as a conventional disc. However, encoded along with the audio data is single frame image data on a CD+Graphics disc, or MIDI playback data on CD+MIDI discs. Switching to the CD+ mode activates the CDTV's front panel track number display; however, all of the advanced functions, which are on the compact disc control screen, are lost. When you play a CD+Graphics audio compact disc, you will also be able to watch the sequence of images play back on the video display while you listen to the music. A CD+MIDI audio compact disc will let you supplement the recorded audio with sounds generated by a MIDI instrument hooked up to the CDTV's MIDI port.



CDTV's on-screen audio CD controls.

CDTV AS CDTV

In the absence of a suitable disc, CDTV first displays a logo screen and after a set time delay it switches to a bouncing CDTV emblem. This prevents burn-in of the screen phosphors. Pressing any button on the remote control brings up the CDTV setup screen. From the setup screen, you can customize CDTV for your operating environment. Settings include the date and time, screen centering, interlace toggle for videotaping, and the time delay before the bouncing CDTV logo appears. You can also choose from 14 languages including American, Danish, German, English, French, Italian, Norwegian, Portuguese, Suomi, Swiss, Chinese, Japanese, and Swedish.

Other than the initial hookup and installation instruction, no written documentation is provided. Instead, the CDTV Welcome Disc provides a complete interactive description and instructions on using

CDTV, samples of the available software, and a description of optional peripherals. It is the Welcome Disk that informs the unsuspecting user that CDTV may actually be an Amiga computer. The absence of a written manual will be frustrating to veteran Amiga users who are looking for a specific piece of information. On the other hand, the Welcome Disc is ideally suited for the user who has encountered this medium for the first time.

After mastering the six basic buttons via the Welcome Disc, using CDTV is simply a matter of inserting the proper disc, sitting back and following the on screen instructions. The immense capacity of the CD-ROM leaves plenty of room for detailed, interactive instructions right on the disc. Most programs make extensive use of digitized vocal instructions as well.

CDTV AS AN AMIGA

To convert CDTV into an Amiga computer, all that needs to be done is to hook up a floppy disk drive. I borrowed an early model A1010 from my Amiga 1000 and did just that. When a floppy drive is present, CDTV checks it first for a bootable floppy disk. If a bootable floppy is present, CDTV goes into the familiar Amiga mode. In this case, the CD-ROM player appears as CD0: which can be accessed as a read-only floppy or hard drive. I found that, in addition to the CDTV programs, I was also able to access HyperMedia Concepts' *Fred Fish Collection* on CD-ROM. However, Xetec's *Fish & More* collections did not seem to be compatible with CDTV.

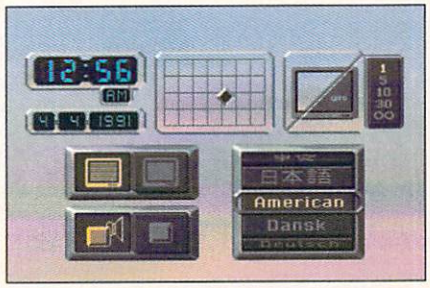
Xetec has been able to get many CDTV titles to run on their Amiga based CD-ROM system by providing suitable AmigaDOS command files. I found that CDTV was unable to read some of the PC-compatible clip art collections on CD-ROM that can be accessed by the Xetec CD-ROM reader. I expect that both of these compatibility problems could be resolved by a suitable floppy disk-based driver program; however, it remains to be seen if this will actually be done.

The lack of a full alphanumeric keyboard limits CDTV's usable Amiga software base to applications which can be operated via the remote's mouse emulation. There is no joystick2 connector, so most joystick-only Amiga games - which typically use a joystick in port #2 - will not work. The one megabyte total memory, all of which is chip RAM, also restricts the range of Amiga applications that can be used on CDTV.

If you do operate CDTV in Amiga mode, take some time to explore the CDTV Welcome Disc. You will find a variety of interesting files including superseded images, invoices, contracts, credits, some off-beat humor and the Action Sequence command Language (ASL) with complete documentation. ASL is a declarative language, designed for CDTV, which is used to develop simple graphical presentations for CDTV in script form.

CONCLUSION

Commodore has done a good job of merging an Amiga computer with the massive data storage capacity of a CD-ROM system. With a 650 megabyte storage capacity to work with, CDTV software has access to a vast storehouse of graphics and digitized sounds. The CDTV Welcome Disk and the first crop of CDTV software do a good job of shielding the user from any possible association with the dreaded computer. Although veteran Amiga users such as ourselves may initially find the CDTV interface rather cumbersome, the uninitiated should welcome its interactive aspects.



The CDTV preferences screen.

The question still remains, will CDTV succeed? With the exception of price, CDTV has a lot going for it. It may turn out that the competition, or the lack of it, will ultimately determine CDTV's fate. ★

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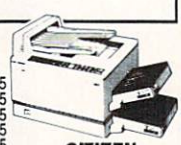

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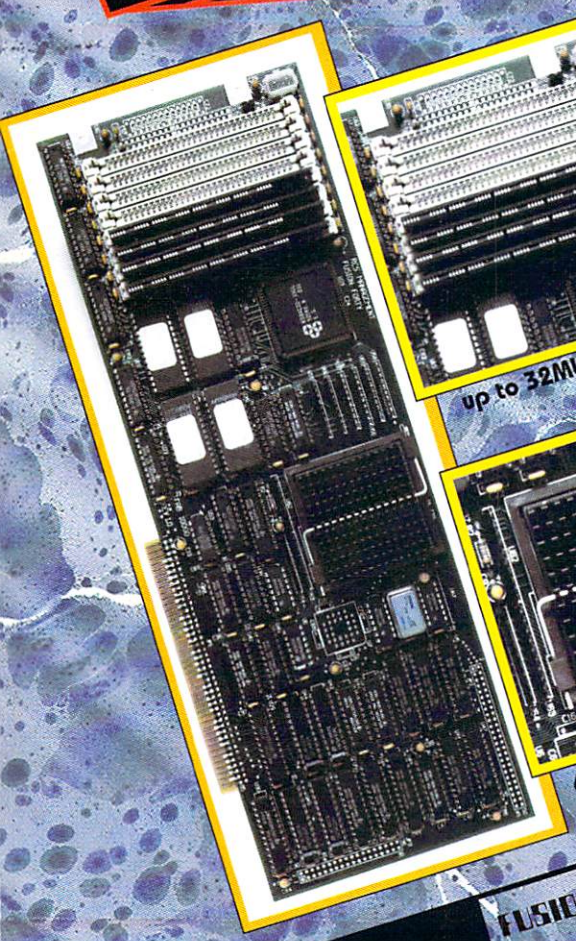
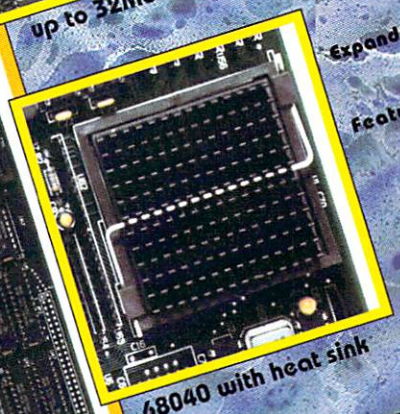


up to 32Mb of RAM



68040 with heat sink

	FUSION-FORTY	Commodore 2630	GVP A3001	IBM i486
Processor	MC68040	MC68030	MC68030	i80486
Clock Speed	25Mhz	25Mhz	25Mhz	25Mhz
Mips	20+	5.8 +	6.4 +	15
MFLOPS	3.5+	Less than 1	Less than 1	1.
Cache Sizes	4Kbytes x 2	256bytes x 2	256bytes x 2	8kbytes
Burst	Yes	NO	YES	yes
Memory(32bit) on board	4M Standard Max 32 M	2M Standard Max 4 M	(Needs Daughterboard)	

RCS Management Inc.
120 McGill Street, Montreal, Quebec
Canada, H2Y 2E5

Tel.: (514) 871-4924
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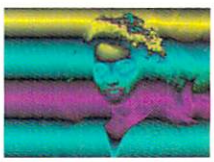

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